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U. S. OF EUROPE IS A-BORNING

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World Peace via World Trade

NEWS subscribers all around the globe have contributed to this World Trade Issue. Major reason: they ardently believe that promotion of international commerce will stave off World War III—which could end all life on planet Earth.

Authentic reports-in-depth from such fascinating and significant places as London, Paris, Bonn, Athens, Melbourne, Sydney, Hong Kong, Sao Paulo, Tokyo, Kuala Lumpur, Singapore, Milan, Bombay, New Delhi, Montevideo, Brussels —you name it, we've got it—all here.

Complete perusal of this single issue should be an education in itself, and can give every total reader a "background" in the economics, politics, and commercial possibilities of widely diverse nations all around our shrinking globule. Incidentally, most of these in-depth appraisals are wondrously optimistic. To all subscribers a thorough reading of this issue is recommended.

London Talks Aimed at Union Of Inner Seven, Outer Seven

By George F. Taubeneck

LONDON, England—Although Berlin dominates the front pages of our newspapers nowadays, far more important news-in-the-making is being hatched here in London behind closed doors at No. 10 Downing Street.

Any day now you can expect announcement of the most far-reaching event since the days of Julius Caesar—whose Omnes Gallia was divided into three parts. To wit:

All Europe will be united economically, and headed toward eventual political unity!

As matters stand now, two separate European economic unions are thriving, and striving politically in a promising fashion.

They are the Inner Seven (EEC) which includes West Germany, France, Italy, Belgium, Holland, Luxembourg, and Greece; plus the Outer Seven (EFTA) which embraces Britain, Sweden, Norway, Denmark, Finland, Austria, and Switzerland.

Talks now going on in London are leading toward the marriage of these unions. The adjustment involved will be painful, temporarily, for Great Britain and her Commonwealth. But they make sense internationally.

Such a union would put 260 million enlightened peoples under one flag. Potentially it could be the strongest political entity in the world. And the richest contiguous market of active consumers anywhere!

Irresistably the U. S. A., Canada, Australia (and probably Russia, too!) would be magneted into the orbit of this

(Continued on Page 67, Col. 1)

In a Nutshell

World Trading— Who's Doing It And Where

DETROIT — More than 107 firms in or associated with the air conditioning, heating and refrigeration industries are currently selling their products overseas, a survey conducted during the past few months by the NEWS has revealed.

That number of firms replied to the survey. More are known to be operating internationally.

The data supplied by these exporting manufacturers painted a revealing picture of the extent and the importance of overseas operations to these industries.

Tabulating the data received showed these highlights:

While all 107 firms export their products from factories in the United States, 27 also own plants in other countries where

(Continued on Page 60, Col. 1)

Westinghouse Cuts Some Motor Prices

BUFFALO — Westinghouse Electric Corp. announced some price reductions and a new pricing policy on motors nominally rated at 1 to 125 hp.

The reductions average 7½% on these motors.

The new pricing policy provides that any future price increases which become effective after the date of the order would not apply to items shipped within 30 days of the price increase.

(Previously, it was reported,

(Continued on Page 67, Col. 5)

Specialty Contractor Groups Planning National Federation

ST. LOUIS — Representatives of 17 specialty contractor associations meeting here last month laid the groundwork for the formation of an amalgamation of national organizations of such nature to represent specialty contractors on matters of mutual interest.

A high degree of interest in such an organization was expressed by most of those present, and plans are under way for another meeting to be held in 60 to 90 days to discuss further steps in establishing a federation.

(Continued on Page 67, Col. 5)

Outside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Does Our World Have a Future?

Uncle Sam's political image has deteriorated so badly during recent years that thoughtful people... eggheads and beer-quaffers alike... are wondering if we still have a chance in the international bottom-of-the-deck shuffle.

Aren't we being outflanked? Aren't the Communists taking over the world? Haven't our "foreign aid" billion-dollar give-aways been senseless?

With Castro on our doorstep, Laos down the drain, Africa in turmoil, and Berlin under the gun, aren't we Americans candidates for oblivion?

Lugubrious historians predict that we are. Our age of glory has passed, they forewarn. Barbarians will crush us.

Khrushchev apparently believes this theory. "Time is on our side," he warned Jack Kennedy in Vienna. "Don't interrupt the historical tide."

It's All Soap Opera

You get a totally different picture when you talk with people engaged in international commerce.

They'll tell you America's star never has scintillated brighter, that the cards are falling our way, and that most of the troubles abroad we read about are sheer soap opera.

Ham actors have taken over the world's political scene. Khrushchev banging his shoe on a United Nations desk... Castro spending most of his

(Continued on Page 34, Col. 1)

The Fleet's Out—for Business!

THROUGHOUT THE SOUTH PACIFIC, the Malay Archipelago, the Indian Ocean, and the Arabian Sea primitive but doughty sailing vessels carry "small businessmen" from island port to port in search of trade. World commerce is as old as the seas and humanity itself. (Photo by the Publisher of the NEWS)

SPECIAL WORLD TRADE ISSUE

102.7% Sales Increase So Far This Year Reported by Maker of 'Artic-Kar' Units

DALLAS—A 102.7% sales increase this year to date over 1960 was announced by Capitol Refrigeration, Inc., maker of "Artic-Kar" auto air conditioners.

President William E. Anglin said that, "Had the weather nationally been normal, and not the coolest spring and summer in years, we would have tripled or possibly even quadrupled our 1960 business.

"Until this year, we had devoted the majority of our engineering and production facilities to customized air conditioning for luxury automobiles and foreign cars. In fact, this is the sixth consecutive year we have been exclusive factory supplier to Mercedes-Benz.

"Furthermore, we were building 'compact' air conditioners for smaller foreign cars including Volkswagen and Renault long before American manufacturers started producing compact cars. You will find Artic-Kar units in use all over the world.

"Last year we decided to make our debut into the general automotive air conditioning field in 1961, rearranging our organizational setup to reach and accommodate the desired goals. We built a new factory industrially engineered for high speed precision production. And we charted a distribution program comparable in character. This program is under the supervision of our Executive Director Don Gilmore, Jr.," Anglin said.

Capitol's new plant is located in Dallas at 3333 E. Kiest Blvd.

This year, it was pointed out, Capitol has produced four different standard models of Artic-Kar auto air conditioners for all makes and models of 1961 American cars, standard and compact, plus most earlier models; as well as for 66 models of foreign automobiles.

Buffalo Forge Nets $254,625 for Quarter

BUFFALO — Buffalo Forge Co. and subsidiaries reported for the quarter ended May 31 a net profit of $254,625, equal to 39 cents a common share.

This compared with $232,147, or 34 cents a share, in the first quarter of the current fiscal year and with $312,369, or 48 cents a share, in the second quarter of the 1960 fiscal year. The company's fiscal year ends Nov. 30.

Export Opportunities

Germany, Egypt, Italy Seek U.S. Products, Know-How, Commerce Dept. Reports

WASHINGTON, D. C. — Export trade opportunities in Germany, Egypt, and Italy for U.S. firms were reported recently by the Business & Defense Services Administration, U.S. Dept. of Commerce.

In **Germany,** L. Tillman, 7a Clausenstrasse, Wuppertal-Barmen, importing distributor and manufacturer's agent, is interested in an agency representation for U.S. air conditioning equipment.

The firm is described as a "young but dynamic enterprise, presently representing two German and one Danish manufacturers of heating boilers, oil burners, etc. It has a large sales organization," according to the report.

In **Egypt,** Universal Cooler Equipment Co., 20 Emad el Dine St., Cairo, seeks a joint venture with an American firm willing to participate in capital investment and know-how for making commercial refrigeration equipment.

The plant should be capable of producing annually 150 electric commercial refrigerators including reach-ins, walk-ins, and freezers; 150 refrigerated display cases of various sizes; and 350 ice cream cabinets in capacities ranging from 10 to 60 gal.

Total capital investment required is not yet known, Universal Cooler Equipment reported.

This firm has obtained the required license from the Ministry of Industry for construction of the proposed plant.

The company operates at present as importer, wholesaler, and retailer of heating, refrigeration, and air conditioning parts and accessories, maintaining what is described as "one of the best shops of its kind in Egypt." Through its parent company, Universal Industrial & Engineering Co., Cairo, it makes refrigerated display cases on a very small scale.

In **Rome, Italy,** the American Embassy revealed that an analysis of Italy's import statistics for 1960 gives evidence that U.S. products can be sold on the expanding Italian market notwithstanding competition from suppliers in countries situated much closer to Italy.

Air conditioners are listed in a table showing a number of American products in which substantial gains in sales to the Italian market were achieved in 1960.

Value of U.S. air conditioner imports is given as $1,564,000 in 1960, compared to $646,000 in 1959.

Each of the products are items that became freely importable from the U.S. in 1959 and 1960.

It was also noted that the rise in the U.S. exports "does not mean that inferior or over-priced goods can be marketed here or that goods can be consigned to a general exporter or an Italian representative chosen at random.

"The same care must be taken in pricing, quality, and packaging in entering the Italian market as would be taken in opening up a new sales territory in the U.S. Sampling, testing, advertising, and other marketing techniques equally are applicable here."

With this in mind, the embassy said, the list in a second table "could serve as a useful springboard for efforts toward further increasing U.S. exports to Italy."

Household refrigerators were among products listed in this table, which includes articles imported into Italy from certain European countries and the United States, volume of which exceeded 1 billion lire in 1960.

Since 1934.... *bringing to you*

the world-renowned quality of the leading producers

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For more than a quarter century, serving as INTERNATIONAL DIVISION for the greatest names among manufacturers of Refrigeration and Air Conditioning equipment, SILLCOX REFRIGERATION CORPORATION has been equipped to meet every need of users and distributors everywhere. Complete systems, units, or components—whatever you require, are available to you from this single source and with the following advantages:

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★ **Time proved awareness of your requirements from viewpoints of service and product performance**

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Mc CRAY REFRIGERATOR CO., INC.
Commercial Refrigerators, Display Cases and Freezers

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TRANTER MANUFACTURING INC.
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Air Conditioners—Oil, Gas & Electric
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EXPORT ONLY

Ansul, Oil Firm Join To Produce Methyl Chloride

MARINETTE, Wis.—The formation of a new petrochemical company, Ancon Chemical Corp., which will produce methyl chloride was announced by Robert C. Hood, president.

Ancon is a jointly owned subsidiary of Ansul Chemical Co. here, and Continental Oil Co., Houston, Texas.

Hood immediately announced the award of a contract to Blaw-Knox Co., Pittsburgh, to build a plant at Lake Charles, La.

Construction of the new plant, which will produce about 60,000,000 lbs. of methyl chloride annually, is expected to start immediately with the completion scheduled for early 1962. The facility will cost in excess of $1,000,000.

U. S. Weatherman Mixed Up About Outlook for August

WASHINGTON, D. C. — The weather picture for August is quite mixed, according to the U. S. Weather Bureau's 30-day forecast, but "above normal" temperatures are predicted for a large part of the nation.

For most of the South and Southeast "above normal" and "much above normal" temperatures are forecast. "Above normal" temperatures are also foreseen for most of the Far West, including the California coastal area and the Pacific Northwest.

"Near normal" temperatures are seen likely in much of the Central Plains states and the Southwest. "Below normal" is the prediction for the Great Lakes area and New England.

During June

Room Coolers Move In Philadelphia, But Creep In Chattanooga and W. Pa.

DETROIT — Distributor sales of room air conditioners in the five-county Philadelphia area in June topped those of a year earlier but dealer sales in the territories served by the Electric Power Board of Chattanooga and West Penn Power Co. fell below June, 1960.

The Electrical Assn. of Philadelphia reported that room air conditioner sales by distributors in June rose to 9,349 from 8,338 in the same month of last year. Of the June, 1961, total, 8,066 units went to dealers and 1,283 to builders.

The distributors' sales for the first half of 1961 declined to 40,008 from 44,567 in the corresponding period of 1960.

According to the Electric Power Board of Chattanooga, dealer sales of air conditioning units for residential use totaled 779 (8 central units) in June. The total for the same month last year was 1,803 (also 8 central units).

Domestic heat pump sales rose to 18 from 8 and those of commercial cooling devices and air conditioning units declined to 44 from 53.

In the southwestern part of Pennsylvania served by West Penn Power Co., dealers sold 430 room coolers in June, against 475 in the previous June. January-June volume totaled 773, compared to 1,243 in the like 1960 period.

Court Puts Cooler Delivering Hot Air Back In Dealer's Lap

WASHINGTON, D. C. — An air conditioner that delivers hot instead of cool air is legally worthless and so is a contract to purchase it, Municipal Court of Appeals here ruled recently.

Upholding earlier findings of Municipal Court, the appeals court held that the dealer, Standard Tire & Battery Co., must refund the price of the unit to the purchaser.

The court ruled that since the air conditioner failed to work properly and delivered only hot air, both the unit and the $300 purchase contract were legally worthless. It was alleged that the retailer tried once to repair the unit but then refused to take it back when it still proved defective.

Mugan Heads Labeled Metal Products Div.

NEW YORK CITY—The appointment of William Mugan as general manager for Labeled Metal Products Co. of Chicago, a division of Howe Sound Co., metals manufacturer, has been announced by William M. Weaver, Jr., president of Howe Sound.

Mugan was formerly vice president in charge of sales for Labeled Metal Products. The company, a manufacturer of aluminum and galvanized steel air conditioning and warm air fittings and ducts, was recently acquired by Howe Sound.

Bell & Gossett 6 Mos. Sales Off Slightly

MORTON GROVE, Ill.—Bell & Gossett Co. reported slight decreases in sales and earnings for the six months ended May 31.

Consolidated net sales for the six months of 1961 totalled $13,932,549 and represented a 2.3% decrease over last year when consolidated net sales were $14,262,763.

Net income, after taxes, declined 19.6%. For the first six months this year net income was $571,210, equivalent to 36 cents per share on the 1,581,860 shares of common outstanding. For the same period last year net income was $710,215, or 45 cents per share, based on the same number of shares.

R. E. Moore, president, said the earnings decline was due to competitive pricing on several items in their industry, coupled with higher labor costs.

He added, however, that present incoming orders are up from a year ago, and expressed confidence that earnings in the months to come could show an upward swing for the balance of the year.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

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Standard Model FF 356 Liquid Receiver with Rotalock Valve, Standard brackets and fusible plug.

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Formerly available only to manufacturers, Rotalock Valves can now be obtained through refrigeration wholesalers. The acceptance and utility of Rotalock Valves are attested by their widespread use throughout the country. These valves are made in both horizontal and vertical styles and may be rotated 360°, permitting their positioning to any angle corresponding to the direction of the tubing, thereby eliminating excessive labor on installations.

● STANDARD MOUNTING BRACKETS

Furnish an easy and effective means for top, bottom or side mounting.

● STANDARD CONVERSION ROTALOCK SPUDS

For use with existing receivers having F.P.T. inlets and outlets

NUMBER	MALE PIPE	FOR USE WITH ROTALOCK VALVE NO.
C.S. 374	⅜"	#24604 - 24608
C.S. 499	½"	#27035 - 27036 - 27037 - 27038 - 24602
C.S. 749	¾"	#24493 - 24494 - 24614 - 24615

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Licensing Firms Abroad

It's A Favored Solution To Foreign Market Problems Offering Many Advantages Against Fewer Risks

By George F. Taubeneck

WASHINGTON, D. C.—Obviously there is a great deal of money to be made in foreign markets.

However, unsettled political climates in many areas, coupled with restrictive tariff and trade laws even in politically stable countries, have discouraged many American manufacturers from expanding into these promising sales districts.

Most favored solution to this problem has been the licensing of foreign firms to produce patented American goods.

Although the avoidance of capital risk is a prime benefit from licensing agreements, it is not the only boon.

The foreign firm to which a license is granted pays the licensor a royalty ranging from 1% to 35% of all sales. In addition, a down payment initial fee protects the American manufacturer when he releases his patents to the licensee.

Because licenses normally are granted only to reputable and cooperative foreign firms, there is the additional advantage of gaining "exchange" information from the licensee as to methods of cultivating the markets and their penetration methods.

Furthermore, since the foreign firm seldom can manufacture all parts profitably, American firms have derived a great deal of profit by supplying these bits-and-pieces to their licensees.

Inasmuch as foreign production schedules and labor costs frequently do not support modern high-speed production tools, many manufacturers have found that they can install obsolete "written off" production equipment in overseas subsidiaries or licensees.

Among the specialized problems encountered by American firms which have affirmed licensing agreements with overseas collaborators is the possibility that a foreign government occasionally will restrict conversion of royalties into dollars.

Ingenious American manufacturers have devised numerous methods of utilizing these funds while they are tied up in a given foreign country. Chief among these is the investing of royalty payment monies in the stock market of the licensees' country.

"Barter" deals, too, are not uncommon.

A practical pitfall which must be avoided is the licensing of the wrong firm. A company which produces inferior merchandise under the trademark of a reputable manufacturer can, and often does, ruin the market for that brand name product.

Despite these occasional difficulties, the pleasant prospect of not having to invest capital reserves to open up new markets has made licensing the fastest growing method of selling American goods abroad.

It is especially prevalent in the air conditioning and refrigeration industry which — in terms of "know how"—is a virtual American monopoly.

Methods of making favorable licensing arrangements are available to interested subscribers of the NEWS upon request.

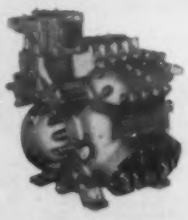
M-PAK MODULAR PACKAGES... A NEW ADDITION TO B&G® AIR CONDITIONING AND REFRIGERATION EQUIPMENT

A COMPLETE LINE OF REFRIGERATION AND AIR CONDITIONING COMPONENTS

B&G CONDENSERS
Lighter, more compact units, featuring quiet, vibration-free operation, uniform gas distribution, cleanable tubes and higher operating efficiencies.

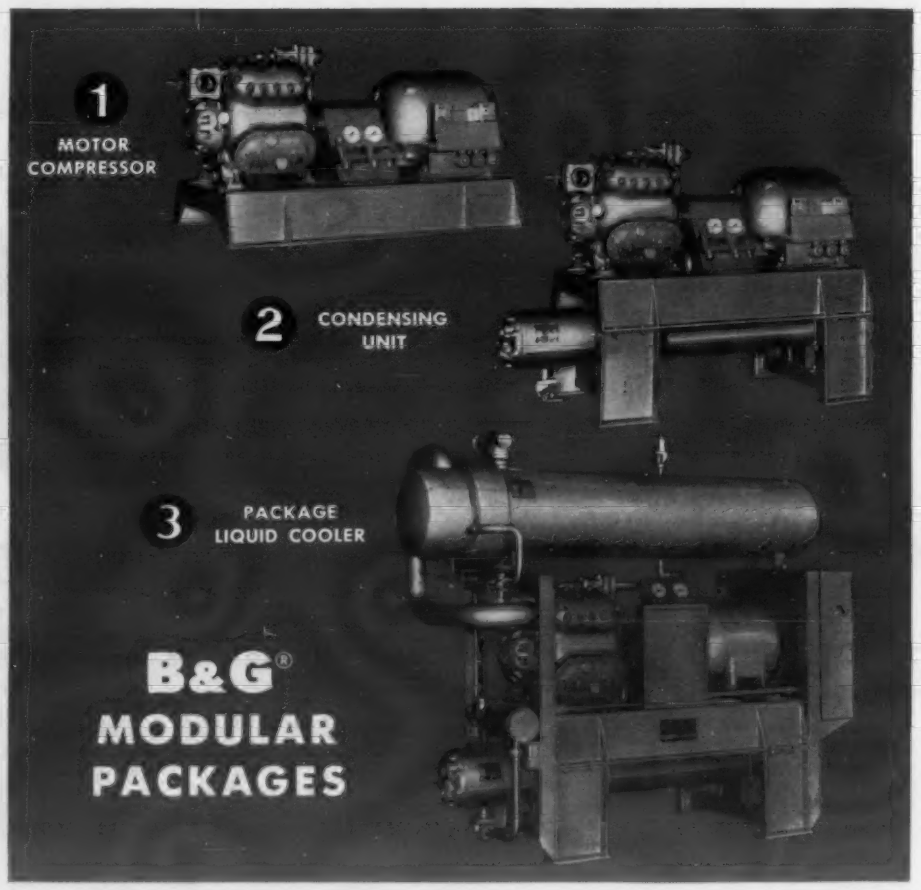
B&G EVAPORATORS
Featuring non-slugging design...tube bundle proof against freeze-up damage ...positive oil return.

B&G SUCTION LINE HEAT EXCHANGERS
Aid thermal expansion valve operation, prevent liquid slugging.



B&G COMPRESSORS
Precisely engineered for vibration-free operation with all the advantages of "open" units. All units have *one* bore —a few interchangeable parts service them all.

B&G CENTRIFUGAL PUMPS
A full range of *quiet* pumps for refrigeration and air conditioning systems.



Modular packages increase availability...speed-up delivery

In its M-Pak Modular Packages, B&G presents a new advance in efficiency designing of air conditioning and refrigeration equipment. M-Pak units are built around five basic sizes of open-type compressors. Factory-stocked motors, condensers, evaporators and controls can be added to these basic units to make a comprehensive line of "packages" of from 7½ to 150 tons.

1. For example, motor compressors are produced by adding a B&G-built motor to a B&G basic compressor. **2.** Further addition of a B&G condenser and a standard base makes a condensing unit. **3.** Addition of evaporator and control panel results in a package liquid cooler.

All major components of M-Pak units are designed, manufactured, and guaranteed by B&G...*one* responsibility for the entire package. This, we believe, is an exclusive feature.

B&G also makes a complete line of refrigeration and air conditioning evaporators, condensers and centrifugal pumps—with many commonly used sizes available for immediate shipment from factory stock.

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Air Conditioners For British Cars Made by Clardy

NEW YORK CITY—The British Hillman and Humber cars have one "luxury" feature bearing a "made in America" stamp. It is an air conditioning unit made for Rootes Motors by the Clardy Auto Air Conditioning Co. of Fort Worth, Texas.

Rootes officials recently announced that sales of air conditioned Hillmans and Humbers in the U.S. had more than doubled over last year.

The firm also announced the availability of a new front-mounted Clardy air conditioner for its Humber luxury car. The new unit sells for almost $100 less than the previous Humber unit yet provides more air cooling capacity, it was pointed out by Rootes.

"Not only are the Texas-made air conditioners supplied as extras for Hillmans and Humbers in the U.S. but they are also shipped to the Rootes factory in England where they are installed on cars ordered from such spots as India, Africa, and the Near East," the announcement said.

Intermart Offers Display Service In Foreign Trade Fairs

TORONTO, Ont., Can. — The U. S. and Canadian businessman soon will be able to participate in foreign international trade fairs without leaving his own desk, according to an organization called Intermart.

His products will be transported, displayed, and promoted at the fairs in a "package deal" which will cost much less than would an individual exhibit, it is claimed.

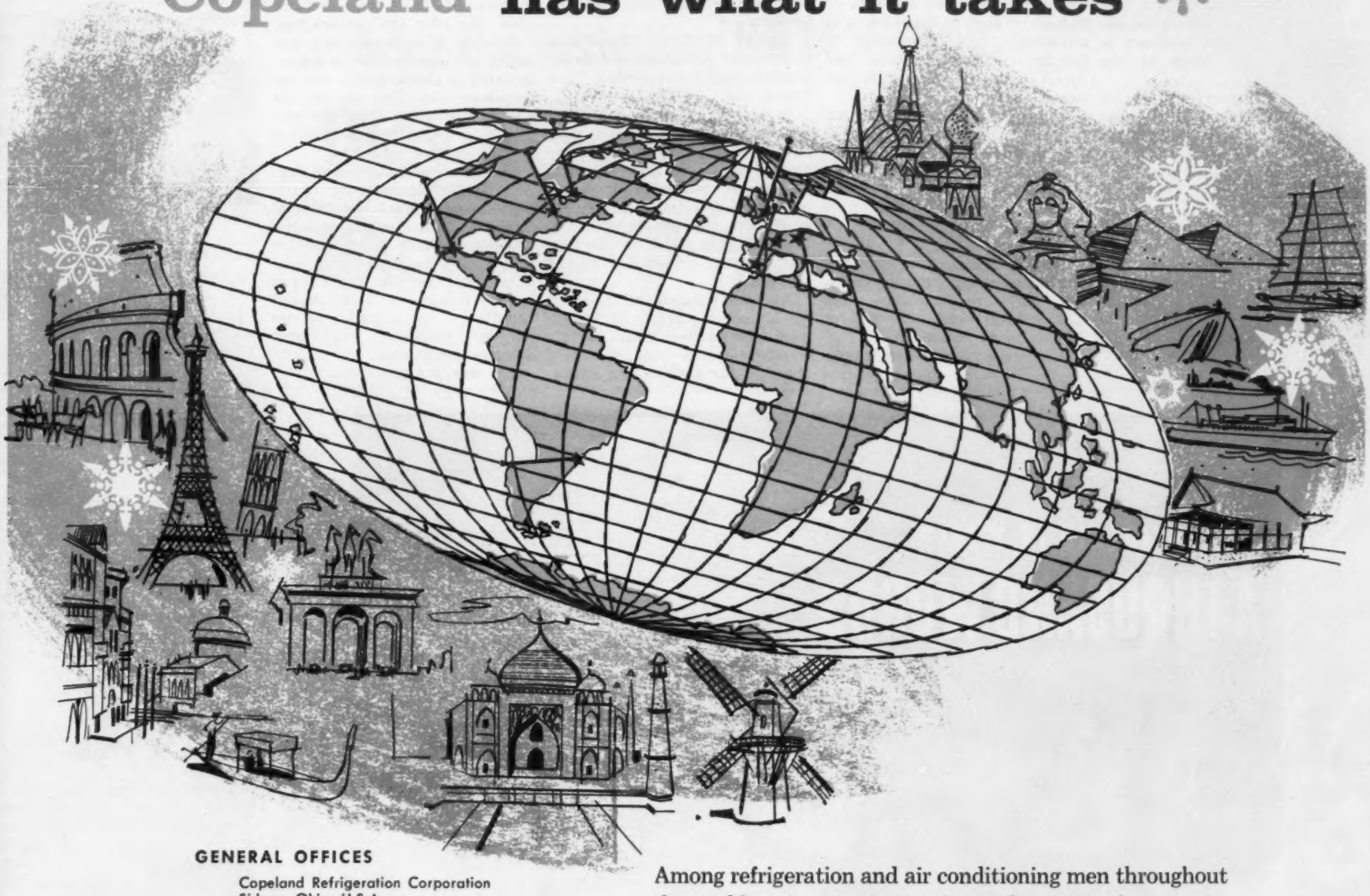
Intermart plans to buy space en bloc at the fairs and set up cooperative traveling exhibits of similar products, and also to handle individual company displays at one or more fairs.

The organization reportedly will staff these exhibits with multi-lingual representatives and assist in securing overseas sales agents.

Starting next spring these cooperative exhibits will be moved throughout Europe to all major fairs. Up to 15 major fairs may ultimately be covered.

Heading up Intermart is John G. Tames, Toronto advertising agency president. Offices are at 1395 Bayview Ave., Toronto 17, Ont., Canada, and 1006 Prudential Bldg., Buffalo 2, N. Y., U. S. A.

Expanding world-wide markets prove Copeland has what it takes *



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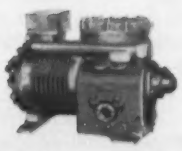
Abroad as at home, Copeland is known as the leading supplier of dependable condensing units and compressors . . . the source for equipment serving the most widespread needs. Customers like the selection of models; the capacity range from $\frac{1}{12}$ H.P. through 30 H.P.; the features that insure lasting performance. These Copeland products, in growing numbers, are rolling off the production lines and moving into world markets.

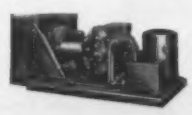
World-leadership in quality and value — one more good reason why you can count on Copeland as your best source for refrigeration and air conditioning equipment.

SINCE 1918 **Copeland** REFRIGERATION CORPORATION, Sidney, Ohio

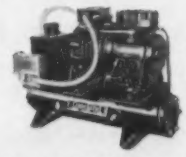


FAMOUS COPELAMETIC MOTOR-COMPRESSORS . . . air-cooled, water-cooled and suction-cooled accessible hermetics . . . ¼ H.P. through 10 H.P.

NEW, LARGER MOTOR-COMPRESSORS . . . four and six-cylinder COPELAMETIC accessible hermetics . . . 7½ H.P. through 30 H.P.



COPELAMETIC AIR-COOLED CONDENSING UNITS . . . compact design . . . ¼ H.P. through 5 H.P. . . . for refrigeration, trucks and other applications.



COPELAMETIC WATER-COOLED CONDENSING UNITS . . . compact design . . . ¼ H.P. through 30 H.P. Also combination air and water-cooled units.

COPELAWELD Space Savers, ⅛ H.P. through ½ H.P. . . . COPELAWELD welded hermetics, ½ H.P. through 5 H.P.

BELT-DRIVEN CONDENSING UNITS . . . air-cooled and water-cooled . . . ¼ H.P. through 7½ H.P. Also combination and truck-type units.

* Accessible Hermetics, Welded Hermetics or Belt-Driven Models

Greece Offers Concessions to Foreign Investors To Relieve Chronic Unemployment

ATHENS—Noble Greece now is a distressed nation where one out of every eight workers is unemployed two-thirds of the time.

That is the current state of affairs in the land of Pericles and Aristotle. Its government is trying to do something about it, of course, aided by our own, plus West Germany and the United Kingdom.

In this classic land, where agricultural resources are limited, some new means of competitive enterprise must be discovered to spur the economy, and thus alleviate one of the major social and economic problems facing the populace.

Under a new five-year plan, set up by the Greek Ministry of Industry, special facilities and advantages will be granted to foreign companies which will invest there in production for export.

The Athens Plan of granting special facilities to foreign investors has a two-fold purpose:

(1) It is intended to create a new, and highly competitive, industrial complex which could be worth over $200,000,000 rather soon.

(2) It is aimed at expanding and modernizing existing industries—at a cost of more than $300,000,000—with the help of international investors.

The Greek government is optimistic about the chances of this plan, for several valid reasons, to wit:

Always of signal importance to overseas investors is the political stability of a nation. That Greece has.

In an age when much foreign investment must contend with hostile socialistic and military juntas, the Greek government is exemplary. Moreover, it is encouraging investment by private capitalists through a series of liberal moves (such as the special facility grants mentioned previously).

Another inducement: there is an abundant supply of intelligent and skilled labor in this country—which long has held the fort for culture and education at the crossroads of three continents.

Finally, an ample supply of inexpensive electric power is available to aid industrialization.

Whether or not these factors will prove sufficient to produce the desired effects remains to be seen. But they are encouraging.

Already in existence is a law which safeguards foreign capital invested in Greek productive enterprises; yet this law so far has done little to stimulate economic growth resulting from outside capital infusions.

Inasmuch as Greece loses over $173,000,000 annually on its import-export ratio, the Special Facilities Plan (which was devised specifically to aid industries producing exportable products) does provide hope for a better future in this tourist country — which long ago ran out of profitably exportable armless sculptures.

It's worth a good look.

Kelvinator Names Jack E. Savage

DETROIT — Jack E. Savage has been named regional manager for Europe, the Middle East, and Africa for Kelvinator International Corp., worldwide appliance subsidiary of American Motors Corp.

Jack Savage

Announcement of his appointment was made by G. T. Etheridge, vice president of Kelvinator. Savage, formerly assistant to the vice president, succeeds Charles E. Findlay, who resigned to establish his own business.

One of Savage's major assignments will be to implement Kelvinator International's "single market" policy in Europe, involving the gradual integration of manufacturing and marketing operations of its European plants.

Savage joined Kelvinator International in 1960 after 14 years' experience in international marketing.

Previously, he had been assistant director of foreign operations for Tecumseh Products Co. and assistant managing director of International Harvester Co. of Brazil.

Tyler Post Goes To W. J. Wallis

TORONTO, Ont., Can.—W. J. Wallis has been appointed manager of Hotel-Restaurant sales for Tyler Equipment Sales, Ltd., here, according to Howard A. Small, president.

W. J. Wallis

Wallis will also have charge of the new Tyler line of adjustable metal shelving and check - outs, which will be manufactured in the Canadian Tyler Refrigeration, Ltd. plant at Tilbury, Ont.

Vienna Acquires Large Portable Heating Plant

NEW YORK CITY—The city of Vienna has acquired a central heating plant which not only can be transported from location to location, but is capable of furnishing heat to 150 apartments for the duration of four days, according to the Austrian Information Service Here.

"This system consists of a movable boiler plant which can be put to immediate use whenever the regular central heating system fails and also when needed to warm up construction during winter building periods," it was explained.

"The special vehicles, built by the Simmering-Graz-Pauker works, resemble tank wagons carried by semitrailer trucks. One wagon serves to transport the oil tank with approximately 2,800 gals of oil, the other to carry the boiler with the completely automatic combustion plant."

SPORLAN

G Valves... with Selective Charges

and it explains better than words why they are the No. 1 choice for all refrigerated cases

The many features of the G Valve are Sporlan originals that have resulted in this Peak Performance story... Constant improvement for maximum operating efficiency includes: simplified design... large flat stainless steel diaphragm... durability... leak proof construction... all working parts accessable... selected materials for internal parts offer maximum protection against corrosion and erosion... and in addition, the famous Sporlan engineered Selective Charges:

C for suction temperature Above Zero
Z for suction temperature Below Zero
X for extremely low temperatures

For the complete story on the G Valve and other Sporlan thermostatic expansion valves with Selective Charges write today for your copy of Bulletin 10-10.

SPORLAN VALVE COMPANY
7525 SUSSEX AVENUE ST. LOUIS 17, MISSOURI
EXPORT DEPT. 85 BROAD ST., NEW YORK 4, N. Y.

Sure I'm installing H&M V-CONS®

. . . they cost less, weigh less, and take up less space!

No wonder these Halstead & Mitchell V-Cons® are the hottest selling air-cooled condensers around. First off, they give full performance yet cost up to 15% less than comparable capacity condensers.

Second, they weigh about half as much because they are housed in light-weight, corrosion-resistant aluminum. The fan blades are aluminum, too. Thus, roof loading is much lower and rigging far easier.

Next, they combine the low height and quiet operation of vertical discharge condensers with the minimal space requirements of horizontal discharge units.

Currently available in 3, 5, 7½, and 10 ton sizes, these new units round out Halstead & Mitchell's line of vertical and horizontal discharge condensers of 3 to 100 ton capacity. All models feature H&M's exclusive Turbu-Flo fins, which improve heat transfer between refrigerant and air.

For more information, contact your wholesaler, or write for Bulletin VC-103. Halstead & Mitchell Co., Dept. H-81, Bessemer Bldg., Pittsburgh 22, Pa.

HM

Halstead & Mitchell

Air-Cooled Condensers • Water-Cooled Condensers • Cooling Towers • Air Handlers and Coils

Export Representative: Sabal-Kielmann, 15 Williams Street, New York, New York

Malaya

To Attain Diversity, This Rubber & Tin Country Lures American Firms

KUALA LUMPUR, Malaya— Diversity! A key word to any stock investor, diversity takes on a note of urgency when it is the key to economic survival of a nation. For this reason, diversity of endeavor is the goal of the Malayan government.

Saddled with a two-product economy (rubber and tin), this newly "emerged" Southeast Asian country has embarked on a dramatic program to assure continued growth even were something drastic to happen to its twin mainstays.

Already, results of this program have included an accumulation of small factories producing items ranging from drugs to soft drinks, a 20% economic growth in the last five years, and an increasing interest by U. S. firms in locating in Malaya.

Upon gaining its independence in 1957, Malaya rejected socialism or communism in favor of free enterprise.

Along with five-year tax exemptions, and duty-free imports of raw materials and equipment, its free economic climate has convinced many American companies that this is an ideal place to base their Southeast Asian expansion.

Another encouraging aspect of Malaya's boom is the absence of inflation. While productivity is rising, prices resolutely refuse to follow suit.

However, diversification alone cannot be credited for Malaya's boom. (Its purpose is, rather, a hedge against possible economic and political crises.)

Currently the rubber and tin business is zooming, and taking the rest of the economy on a happy rickshaw ride along with it. A rise of nearly 20% in sales of Malaya's basic commodities was recorded last year over 1959.

On the political scene — so vital to attracting outside investments in emerging nations —all is serene and calm and West-oriented. Instinctively and historically Malayans hate the Chinese.

That is why they refuse to admit the island of Singapore, which is dominated by overseas Chinese (most of whom detest communism, too) into the Federation of Malay States.

This Red-China-hating government is planning freedom and prosperity, rather than planned and controlled poverty.

West Africa

Strong Drive for Economic Development Noted In this Virtually Untapped Market

LAGOS, Nigeria — Those new nations which formerly composed French West Africa represent a virtually untapped market for United States exports, from *air conditioners* to road-building equipment. This was the conclusion of a U. S. trade mission which recently made a visit to the West African area.

Nations visited by the mission were Mauritania, Mali, Nigeria, Dahomey, Upper Volta, the Ivory Coast, Senegal, and Togo. Combined population of the eight republics is 20,000,000. Major exports include cocoa, coffee, cotton, industrial diamonds, manganese, palm oil, lumber, and rubber.

Members of the mission (which was headed by Patten D. Allen, a senior foreign service officer assigned to the Department of Commerce) disclosed that a strong drive for economic development was evident.

This drive, they added, will speed demand for an increased volume and variety of imports. Political and business leaders of these new republics showed considerable enthusiasm for more trade with Americans. Although the republic continue to maintain close economic and social ties with France, there was much evidence of goodwill toward the United States.

This mission was the eighteenth of similar groups recently sent to that area by various countries, including the Soviet Union. The United States mission appeared to impress African leaders because it was primarily a business mission rather than a political one.

Participants in the American mission were Marvin S. Allyn, representing farmer cooperatives, poultry, and farming; Irving J. Fain, director of various companies engaged in manufacture and trade; C. W. Miller, business consultant formerly with Sears, Roebuck & Co.; Capt. Lawrence A. Renehan of the Farrell Steamship Lines; and Dr. Albert C. Stewart, assistant research director of the Union Carbide Corp.

At present, United States products in markets of the eight nations are conspicuously few, and sales efforts by American suppliers almost non-existent. This condition, it was emphasized, could be changed substantially with an active effort, along with careful study and planning.

Study Shows Foreign Competition Is Not Major Threat to U. S.

WASHINGTON, D. C.—In a study of labor costs and international trade, the Committee for a National Trade Policy has concluded that foreign competition does not pose the threat of excessive imports because it can hope to meet only a small fraction of U.S. demand.

Use of wage differentials to affect U.S. trade policy, the committee warned, "could have disastrous effects on our foreign commerce and our international economic and political position."

The study maintains that the greatly differing costs of fringe benefits or social charges, between countries and between industries and companies within any country, impose "grave qualifications" on any comparison of wages as a measure of comparative labor costs.

According to the study, the U.S. gains by importing those goods for which it has a relative disadvantage in production. It thus gains the opportunity to export goods for which the U.S. has a relative advantage due to its superior natural resources, skilled labor, capital goods per laborer, technical knowledge, and managerial skill.

LARKIN MLT meat storage program saves money for retailers, makes money for refrigeration dealers

The retail meat industry is extremely enthusiastic about Larkin's new program for proper meat storage using the new LARKIN MLT System.

Astonishing graphic proof of the results obtained in two years of research and testing have sold this system to large chain and independent operations. Here's what the system does:

- CUTS MEAT SHRINKAGE
- REDUCES TRIMMING WASTES
- RETAINS BLOOM OF MEAT
- IMPROVES SHELF LIFE
- INCREASES PROFIT

The industry is buzzing. Stores are not only adopting the program for new construction but are also finding it profitable to convert existing systems.

LARKIN is ready to help you capitalize on this *new* source of revenue. Literature that tells the story, *sells your prospects*, is available to all LARKIN dealers.

Get in on the ground floor. See your wholesaler or write direct for Bulletin MLT-1061.

MATCHED TO THE NATION'S FOOD AND COMFORT — LARKIN

LARKIN COILS INC.

519 Memorial Drive, S.E. • P. O. Box 1699 • MUrray 8-3171

ATLANTA 1, GEORGIA

HONEYWELL ANNOUNCES

The big breakthrough that reduces your control inventory

Open flap quick!

Instead of 18,000 controls...

NOW 170 WILL DO

INCREDIBLE but true! Of the 18,000 control variations now available, Honeywell engineers selected and re-engineered 170 controls that do the job of the 18,000! And, they'll do the job right! Months of statistical and engineering analysis went into TRADELINE to allow you to streamline your control stock.

NESTLED IN STYROFOAM! New idea in control packaging. Just label and mail. Can't get damaged on truck. The Honeywell Round, V80 and V81 gas valves, pilotburners, thermocouples, and the Y400 Powerpile package are among the first of TRADELINE Controls to be nestled in self-mailing containers.

FOR WHOLESALERS:

TRADELINE streamlines your control inventory... eliminates slow movers

FOR DEALERS:

Just a few on your truck will normally handle up to 93% of your service problems

Open flap quick!.

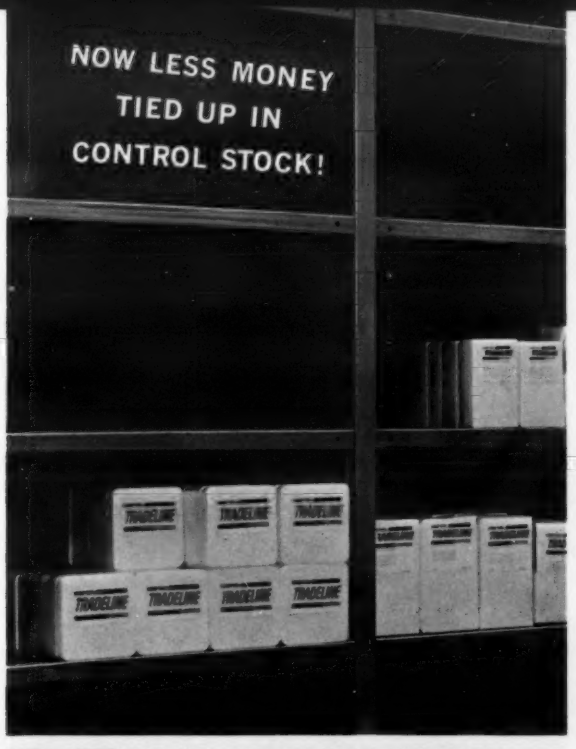
*TRADEMARK

Now you wholesalers can give your dealers better service

You dealers can give your customers better service

YOU BOTH MAKE MORE MONEY WHEN YOU SPECIFY *TRADELINE*

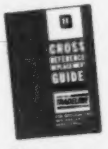
THE NEW WAY TO STREAMLINE WHOLESALERS' AND DEALERS' CONTROL STOCK



ON THE SHELF...

Cuts control inventory drastically! The revolution in controls is here. No need to carry an endless variety, tie up capital and shelf space anymore.

Just 170 TRADELINE Controls do the job of 18,000 or more. By selecting the TRADELINE Controls you need for your territory, you can eliminate stocking many of the models and slow-movers you now have to carry. In fact, a proper selection of TRADELINE Controls will do the job in 93% of all installations!



New pocket-sized cross reference guide instantly tells you which TRADELINE Control to use. Prices? You get all the benefits of TRADELINE *at no increase in cost.*

Planned program helps speed changeover. We'll help you streamline your stock, acquaint your men and your dealers with TRADELINE. Hard-hitting advertising and merchandising will help you sell, too. So place your orders now, and be ready for the fall rush. For additional help, call your Honeywell representative.

ON THE TRUCK...

Just a handful can handle up to 93% of all service problems. Now, you can afford to stock all the controls you should have. Put the right TRADELINE Controls on your truck and you're in business! They eliminate that extra trip for the right control.

Because TRADELINE Controls have been carefully selected and engineered to do the job of 93% of all common control applications, you just carry a few controls instead of hundreds. The handy cross-reference guide tells you instantly what TRADELINE Control to use. Just check the unit to be replaced against the list and pick the basic TRADELINE Control.

PROVED IN TWO-YEAR TEST!

The TRADELINE idea of a few controls interchangeable with hundreds was field and sales tested thoroughly in the Southwest over a 2-year period. Then Honeywell engineers set out to make the idea work for nearly every control.

Why don't you call your wholesaler right now? He'll help you set up your basic stock.

H
HONEYWELL

HONEYWELL
TRADELINE
CONTROLS

HONEYWELL INTERNATIONAL. Sales and service offices in all principal cities of the free world. Manufacturing in the United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.

'European Advertising Style'

It Has Been Principal Means of Introducing Common Market Concept to People

PARIS, France — Important changes are taking place within Europe's advertising industry. Marketing people here are beginning to think of advertising as the common language of the Common Market.

Some say a "European advertising style" is evolving. This could help circumvent the traditional barriers of language, custom, and politics.

"Advertising has been one of the principal means of introducing the idea of the Common Market to the people of Europe," declares Emile Morando, managing director of Synergie, big French advertising agency.

"A European businessman who wants to increase his profits must strengthen the concept of his operation as a part of the Common Market. He can do this by advertising."

German, French, Italian, and Belgian advertisers now are addressing their own countrymen in the same manner that they woo consumers in other EEC countries, M. Morando points out.

For example, a campaign to introduce a German filter cigarette in France uses the theme that the product is "The Cigarette of the European Elite."

Copy says, in part: "In all of Europe, people are smoking HB cigarettes more and more." There is no mention of the fact that the cigarette is made in Germany.

This approach stresses the European angle, and also avoids stirring up any latent anti-German sentiment that may exist among older French consumers.

While the "European approach" becomes more important, advertising men are moving to standardize their professional tools.

Agencies operating in the Common Market recently organized the Communite European Organization Publicite.

Purpose is to provide a forum in which European advertising men can discuss their mutual problems and develop standardized methods of solving them.

According to a report recently issued by the West German Central Association of the Advertising Industry, advertising expenditures in the six Common Market countries last year totaled about $1,500,000,000.

Drenthe, Netherlands Gets Cold Storage Depot

DRENTHE, Netherlands — A Unilever cold storage depot opened in this province is claimed to be the largest in Europe.

The depot was opened at the plant of the Unilever subsidiary, Lucas Aardenburg. The plant has a storage capacity of 5,300 tons and is equipped with electronic temperature regulators.

The managing director of Iglo N. V., in discussing developments in the Dutch quick-freeze industry, said Unilever had invested £1.4m. in the production and storage of quick-frozen foods in the past year.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Controls Company Expands Facility In West Germany

SCHILLER PARK, Ill.—Controls Co. of America announced that a major expansion of distribution facilities for its products has been completed by Deutsche Controls GmbH, CCA sales and service organization in West Germany.

Deutsche Controls has acquired the business and operations of Kontrollgerate Handelsgesellschaft mbH of Munich, the largest independent distributor of Controls Co.'s products in West Germany.

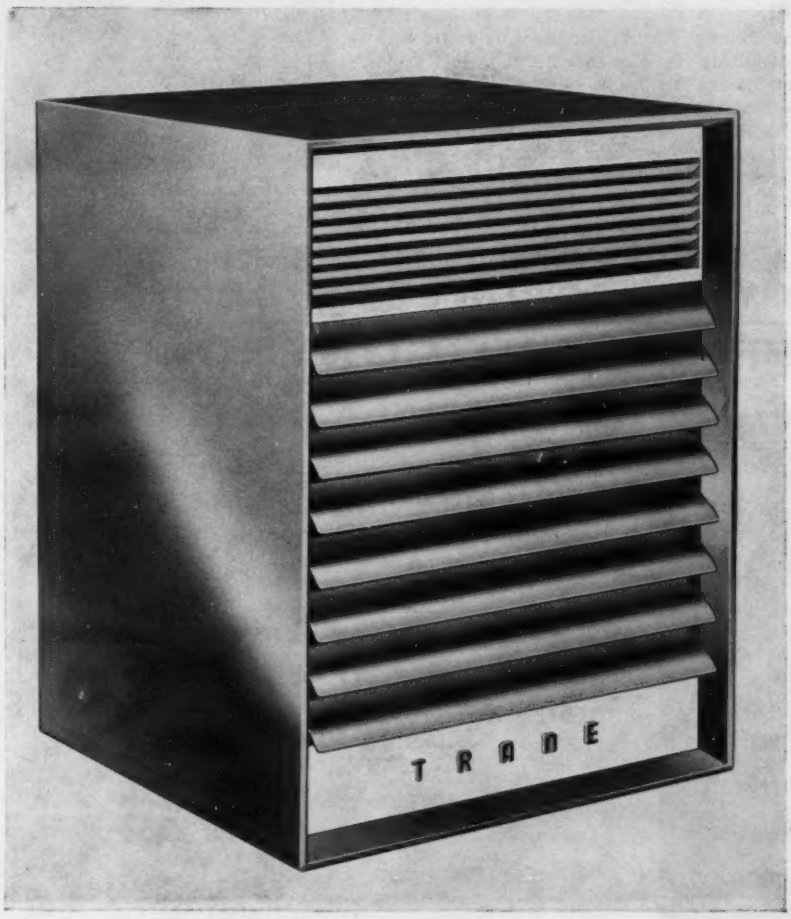
Ernst Borchardt, previously president of Kontrollgerate, has been named general manager of Deutsche Controls. He is an authority on European oil-fired spaced heating systems, it was noted.

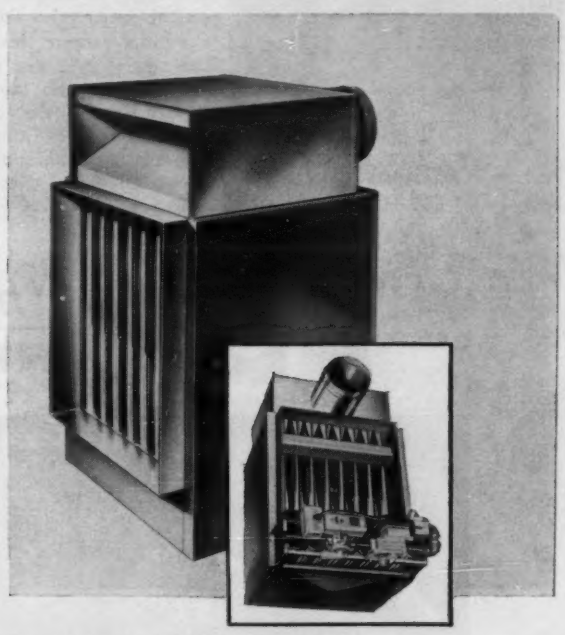
Sales and service centers in nine principal West German cities will be operated under a consolidated management from Munich. Deutsche Controls will open a new office in Kassel and expand into the Austrian market with offices in Vienna and Salzburg. A broad product line will be handled, including appliance controls, heating and refrigerating controls, synchronous motors, and shaded pole motors.

York-Shipley Boilers To Be Made In Ontario

PETERBOROUGH, Ont., Can.—Low pressure packaged steam generators of York-Shipley, Inc., York, Pa., will be made here by De Laval Co.

De Laval is expanding its production facilities here to fabricate the boilers, which range in size from 10 to 600 hp, and for production of other major De Laval products.





Duct heater is AGA approved for downstream operation from cooling units without by-pass. Provides heating cycle for remote cooling units, such as the TRANE Self-Contained Air Conditioner. Drain pan (shown in inset) is standard equipment. The unit has low static resistance, is of aluminized construction. Adjustable modulating valve reduces input as much as 75%. 2-stage, 2-input valve available.

Propeller-type heater uses a new, quiet TRANE Fan that is designed exclusively for unit heaters. Access door on bottom of casing makes unit easy to clean. Complete range of sizes from 33,000 to 250,000 Btuh input.

New Trane gas-fired heaters have advanced styling, compact design!

High-performance blower and propeller units—plus duct models approved for downstream operation

Here's a new line of gas-fired heaters from TRANE that combines smart, modern appearance with peak performance and versatility! These TRANE Heaters are ruggedly built for long life—yet they're light in weight, compactly designed for use where space is at a premium.

Three basic types are available: propeller, duct and blower. All models feature an aluminized steel, all-welded heat exchanger that assures long, trouble-free operation. The steel, ribbon-type burners have stainless steel inserts. And the burners are removable individually for service and maintenance.

The TRANE Duct Heater may be used for downstream operation, for use with remote cooling units (such as the TRANE Self-Contained Air Conditioner). All parts of the duct heater that are exposed to the cold air stream are of aluminized construction—including the drain pan, which is standard equipment.

True 2-speed, 2-input propeller units available in 5 sizes. The motor speed and gas input can be automatically cycled to maintain more even temperatures; to provide greater operating economy.

The light weight of these new TRANE Heaters means more Btu's per pound. Freight costs are lower; and installation is simplified: minimizes the need for expensive structural reinforcement.

WANT MORE FACTS on these gas-fired heaters? Just ask your nearby TRANE Sales Office; or write TRANE, La Crosse, Wisconsin.

Blower-type heater uses a forward-curved centrifugal fan. Free delivery or duct work installation; adjustable fan belts to provide proper air delivery against varying static pressures. Streamlined fan inlet for exceptionally quiet operation. Louver-Fin Diffusers increase air throw. Sizes from 33,000 to 250,000 Btuh input.

For any air condition, turn to

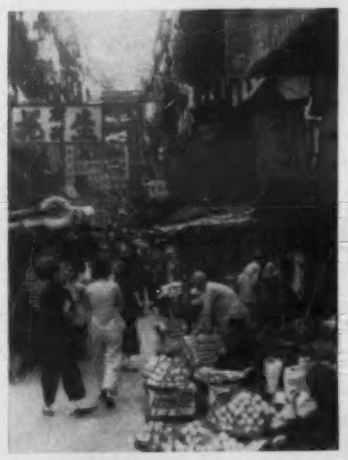
TRANE

MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

THE TRANE COMPANY, LA CROSSE, WIS. • SCRANTON MFG. PLANT, SCRANTON, PA. CLARKSVILLE MFG. PLANT, CLARKSVILLE, TENN. • SALT LAKE MFG. PLANT, SALT LAKE CITY, UTAH • TRANE COMPANY OF CANADA, LIMITED, TORONTO
101 U.S. AND 20 CANADIAN OFFICES

HONG KONG: *It's Frenetically Active, Hotly Competitive, Happily Profitable*

By George F. Taubeneck



NO STORE on this street exceeds 12 ft in width.

HONG KONG — This international city is a commercial pistol. It's frenetically active, hotly competitive, and happily profitable.

The U.S.A. share of Hong Kong's imports increased 1.8% last year — and our favorable balance of trade with this British Crown Colony (situated at the edge of Communist China) continues to grow in 1961.

Prime mover in this phenomenon is the air conditioning industry. In the last few years Hong Kong's air conditioning business could look Houston, Phoenix, Memphis, and St. Louis squarely in the eye in terms of dollar volume and market penetration.

International Engineering (Carrier), for instance, has air conditioned Hong Kong island's main street from stem to source, including the following buildings:

Supreme Court, Hongkong & Shanghai Banking Corp., The Chartered Bank, The Bank of Canton, Fu House, Chekiang First Bank of Commerce, Bank of America, Bank of East Asia, The Telephone Co., Lane, Crawford's; along with the Gloucester Hotel, British Overseas Airways Corp., International Engineering Ltd., Jardine House, Takshing House, The Wing On Bank; in addition to The Wing On Co., Hong Kong Housing Authority, United Chinese Bank, and The Hong Kong Bank.

BOARDING THE FAMOUS Kowloon-Hong Kong ferry (made romantic by "The World of Suzie Wong" movie). There are six of these boats in action at all times—three going, three coming.

Rapidly moving to the top, Yee On Hong (Worthington) has air conditioned nearly all the new hotels put up in Hong Kong recently. We cite: Miramar, Park, Ambassador, Imperial, Arcade — with fan-and-cool units in every room, and three-speed controls.

Energetic T. K. Tan — who has been a professional business manager ever since his brilliant origins in Dutch Indonesia, down through quick shifts into Bangkok and Shanghai, to his present position of eminence in Hong Kong—is bolstered at Yee On Hong by H. B. Lo, H. S. Y. Gee, and an organization which numbers hundreds of employes.

American Engineering does a decent job for Frigidaire and Frick in Hong Kong, too. Chrysler Airtemp, represented here by R. D. Vopni, recently has signed the Bogard importing firm as a new distributor, and is forging ahead confidently.

Outside of this fundamental large-scale air conditioning action, the big noise in Hong Kong is window and through-the-wall air conditioners. (In this arena, Yee On Hong sells General Electric.)

Gilman & Co. does a real good job with Philco room units. East Import & Export, Ltd., maintains a foothold for Kelvinator. And Gibb-Livingston represents RCA Whirlpool in Hong Kong promisingly. (More on this firm later.)

Biggest man in the room air conditioner business hereabouts, however, is the Fedders man, Arnold Hall (who, incidentally, has a quite pretty little wife and wondrously sturdy little son).

According to Mr. Hall, managing director of the H. W. Turning firm and one of the two original partners, "when we found that room air conditioners were sold by firms with a 100% mark-up theoretically to offset a 5-year warranty, we knew that there was room in the business for us if we boldly built up a service organization to bring the costs of service and repairs within reasonable limits."

Ever since he acquired the Fedders line, Mr. Hall has set the pace in making package air conditioning available to consumers at progressively lower prices, all the while improving after-sale service facilities.

Prices never are slashed at

ALCO *the one complete line of* **REFRIGERANT CONTROLS**

Thermo® EXPANSION VALVES
for all refrigerants from 1/4 to 200 tons

SOLENOID VALVES
Sizes & Type for every application and refrigerant

FOR AIR CONDITIONING AND REFRIGERATION

ALCO VALVES • CONTROLS STRAINERS • DISTRIBUTORS

FOR EVERY APPLICATION—DIRECT EXPANSION OR FLOODED SYSTEMS

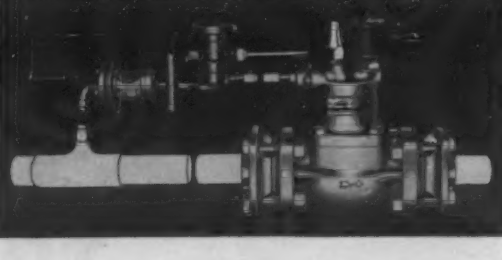
REFRIGERANT STRAINERS
maximum Screen area—
Sizes & Type for every application

Venturi-Flow DISTRIBUTORS

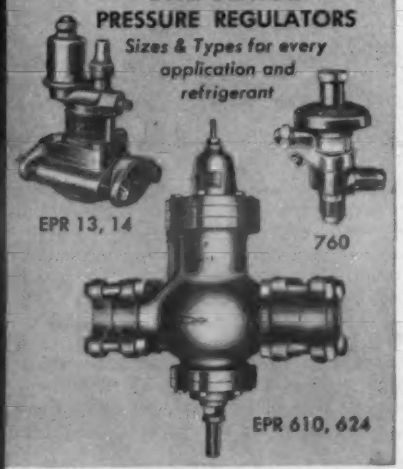
Float SWITCHES
for trouble free liquid level control

wide application . . . low pressure drop . . . any position . . . one-piece construction . . . no nozzles

P.O.S. PILOT OPERATED THERMO® VALVE
with integral solenoid stop . . . for larger installations



EVAPORATOR PRESSURE REGULATORS
Sizes & Types for every application and refrigerant



REFRIGERANT FILTER-DRIER
97% pure Dessicant
Block Form
Silica-Gel PA 400
and Molecular Sieve

ADK

Use and Specify ALCO Controls the one complete line designed and engineered for efficient trouble free performance.

See your Alco Wholesaler—Write for Specification Details

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the cost of service—which, incidentally, is intricately elaborate by U. S. standards.

Service is extended on an almost cradle-to-grave basis, starting with free installation, free monthly service for a whole year, and free labor costs within the entire warranty period!

H. W. Turning & Co., Ltd., now have 80 mechanics and engineers on a permanent payroll, occupying a mid-town fully-equipped workshop of 7,000 sq ft.

To add mobility to these service facilities, Mr. Hall's firm was the first to employ motor scooters for service purposes. His motor pool now operates a fleet of 25 motor scooters and motorcycles along with three delivery trucks.

Mr. Hall trains his own mechanics, incidentally.

Aside from technical skills,

(Continued on next page)

DRAMATIS PERSONAE: Proper British banker, Chinese coolie, American tourist. Where but in Hong Kong could you see a vignette like this?

UNCONSCIOUSLY and accidentally, the personnel in this Hong Kong scene would seem to be leaving the United Nations Building in New York City.

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SCENES 1 AND 2: the H. W. Turning Co. service shop for air conditioners. Picture at far right: Display of refrigerators, freezers, and room air conditioners in the Turning showroom.

Hong Kong--

(Continued from preceding page)

service personnel are trained to be good ambassadors for the company, with emphasis on politeness and pleasant manners. Success of this policy is evident by the tremendous goodwill which it has created with the general public.

"Employe turnover in our workshop is less than 1½% per annum," remarks Mr. Hall, "and the whole company takes pride in this achievement."

Although wages are low by American standards, the average clerical or technical employe of this company receives fringe benefits equivalent to 15 weeks' wages in a year. Employes are given every chance and encouragement for promotion.

"If a man fits himself for the next better job, he gets the better job along with the extra benefits," prides Mr. Hall.

Thanks to this enlightened policy, plus co-operative advertising funds provided by Fedders, Mr. Hall's room air conditioner sales never have failed to show an annual 50% increase in each of the last six years.

Today, H. W. Turning & Co., Ltd., has a remarkable market penetration of 35% in the room air conditioner field in Hong Kong. Energetic Mr. Hall expects its 1961 volume will top 2,500 room units.

About a year ago, the firm entered the commercial packaged air conditioning field (limiting its equipment to 15-ton capacity).

In addition to air conditioning equipment, such products as refrigerators, freezers, dehumidifiers, washers, radios, tape recorders, T.V., office equipment, diesel outboard motors, telephone equipment, etc., are retailed by the Turning Co.

Most popular household refrigerator he sells, the Frimatic, is manufactured in France.

"U. S. manufacturers can be incredibly short-sighted when it comes to export," observes Mr. Hall. "In the initial years of our operation, we were handling air conditioners manufactured by U. S. companies other than Fedders.

"On several occasions, short-circuits of the electrical system started fires in the air conditioners, supported by combustible plastic components in the units (Hong Kong is extremely humid in summer with relative humidity averaging 90% over long periods of time).

"When the cause was discovered, we stripped the units of all plastic components and recased the components with metal. The operation eventually cost us over $1,200, but the fire hazard was eliminated.

"When the matter was reported to the U. S. manufacturer concerned, we proposed to recover 50% of the costs involved. The manufacturer took two months to reply to the cable and finally responded casually, after many urgent appeals, that fires could not have developed in their products. Our claim was flatly refused.

"And yet, when matches were applied to the plastic components of their air conditioners, they burst into naked flame in 30 seconds!

"In those days we sold 400 air conditioners per annum. We stopped buying from that manufacturer. Today we are buying more than 2,000 units annually from Fedders."

A. T. Dow, managing director of Gibb, Livingston & Co., runs a tremendous business—the sort of all-purpose importing firm which is typical of the Orient.

They import textiles, timber, rubber, metals, building materials, pharmaceuticals, chemicals, oils and varnishes, coal and coke, liquors, and foodstuffs.

In addition to Whirlpool products, they also import and sell Lau blowers, Farr filters, Drayer-Hanson coils, Siltol refrigerators (Italian) and RCA items.

It's a big company, and it serves a huge market.

How do you judge an international air conditioning manufacturer?

Briefly, by the service, technical help and products which he develops specifically for international requirements.

International air conditioning is a unique branch of engineering which requires specialized knowledge and training. The world-wide climate engineer must cope with changing markets, with language barriers, and with variations in standards and climatic conditions. He must also keep pace at all times with the dynamic evolution of his industry.

Worthington has developed such a team of world-wide climate engineers. Backed by 70 years of experience in the industry, Worthington's international organization offers you the following:

HEADQUARTERS ORGANIZATION

The hub of Worthington's international air conditioning and refrigeration organization is composed of a group of air conditioning specialists experienced in international trade. Through field offices and resident engineers covering the world, this headquarters group coordinates all activities from initial product planning for the overseas market to the final balancing of a complete system by a Worthington erection supervisor.

RESIDENT SALES ENGINEERS

Linking the headquarters organization with distributors and customers is a group of highly-trained and experienced resident sales engineers.

Each resident engineer is an expert in his territory. He maintains close personal contact with all distributors in his market area. Through regular visits, he assists in customer contact, making quotations and insuring the availability of proper local facilities to serve the ultimate customer. When necessary, the Worthington resident engineer can do any number of jobs, from supervising proper start-up of a new installation to training local distributor personnel.

DISTRIBUTORS

The statement "In any country we are only as effective as our distributor" expresses Worthington's basic philosophy of international business.

The distributor and his engineering staff are the keystones of Worthington's international organization. Headquarters and field personnel are both dedicated to serve them and to give them the support necessary to insure success in their local market.

Worthington has devoted considerable effort to training distributor personnel. Regular training programs are conducted, and key men from successful distributors have obtained air conditioning and refrigeration training at Worthington plants.

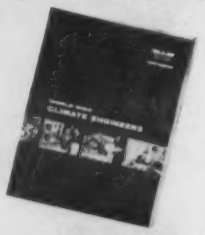
THE "FULL CHOICE" LINE

"Full Choice" means that Worthington has a complete line of central station and packaged equipment for any industrial plant . . . for any commercial, industrial or residential building. A full line of compressors, hermetic or open, centrifugal or reciprocating, freon or ammonia, ranges from 2 tons to several thousand tons in a single unit.

A wide selection of air handling units, fan coil units, and induction units also enables Worthington to supply almost any type of low-side equipment.

Worthington's accumulated experience is a basic factor in its continuous research and development program. New products are regularly introduced and find a ready acceptance in world markets.

Among the new products introduced to the international market within the last few months are packaged units up to 60 tons, a completely new diesel-driven transportation refrigeration and heating unit suitable for many international applications, a packaged multi-zone unit, and a broad line of centrifugal fans.



Worthington's international air conditioning organization is built on people, products, training and experience. A new brochure, "World-Wide Climate Engineers", will tell you more about this organization in detail. Write Worthington Corporation, Dept. 107-13E, Harrison, New Jersey, U.S.A.

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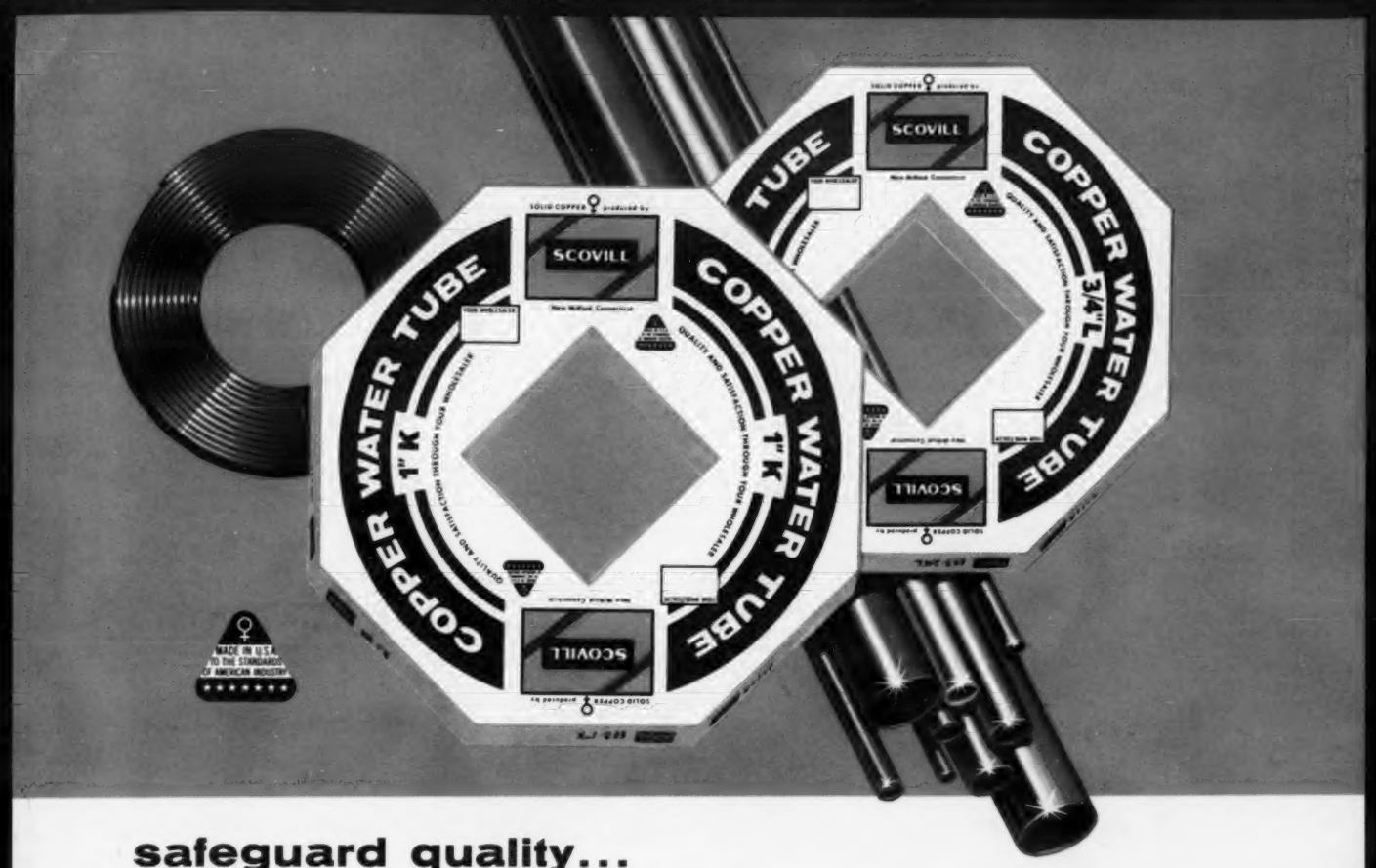

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Move in for your share. Build your business and help keep America growing. Extra production creates more jobs, helps balance the outflow of gold, and wins new friends abroad with U.S.-made products.

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Now's the time to discover the many ways in which your business can grow. In the lucrative export markets. In new U.S. markets. In developing new products. In attracting new industry to your community. Just write or phone the U.S. Department of Commerce Office of Field Services in your city, or Washington 25, D.C. They are ready to help you grow with America!

NOW'S THE TIME TO GET GROWING IN A GROWING AMERICA!

THE NEW EUROPE

Prosperity, Improved Conditions of Laboring Class And Economic Unity Among Breath-Taking Changes

By Lawrence N. Townshend
Ad Auriema, Inc., Exporters

NEW YORK CITY—To anyone who has been away from Europe for some time, the changes which he finds upon returning to the Continent are breath-taking. Especially is this true of all phases of the refrigeration and air conditioning industries.

The writer recently has returned from a three-month visit to 11 countries and 28 cities on behalf of the principals whom we represent for export (which include the Sporlan Valve Co., the Hubbell Corp., Temprite Products, Revco, Ranney, and others).

One of the first things which enters one's consciousness in Europe, today, is the wave of prosperity which is sweeping over the whole of that free continent. Encouraging thing about it all is that this new prosperity is filtering down to the workers themselves.

It is quite a common thing for factory workers from industrial countries such as the United Kingdom, Germany and Denmark to be seen taking their vacations on the French Riviera, in Italy, or Spain — something which was unheard-of in the past.

One feels that there is a sense of unity between the peoples of the different countries of Western Europe, such as never has existed before.

In the old days, when one crossed the border from one country to another, one felt almost as though one had entered a different world — something quite intangible, but nevertheless a definite sensation of having passed into a different psychological atmosphere.

Today, with modern communications, radio, television and jet travel, this situation has changed. There seems to be a far greater harmony and unity of thought between these peoples of various countries.

Undoubtedly, the establishment of the European Common Market, and the creation of the Outer Seven, have had much to do with this. It is to be hoped that the two systems eventually will become integrated, with Western Europe becoming one giant market.

The general improvement in trade restrictions and the removal of trade barriers in the European Common Market already has contributed substantially to improved distribution and mass production methods.

Whereas, in the past, manufacturers were obliged to confine production to the limits of their own national frontiers (owing to trade barriers and tariffs) they now can plan their production and distribution over a much larger area, with corresponding economies in cost and improvements in distribution.

In view of this general trend, it is suggested that any organization considering doing business with Europe should begin to look upon it as a whole, as one complete market, rather than as many little ones.

European activity in the air conditioning and refrigeration industries is increasing on an unprecedented scale.

The writer has been informed of many cases wherein American manufacturers now have a larger total production through their European licensees than their domestic production in the United States itself.

Eaton International Being Established

CLEVELAND — Eaton Mfg. Co. announces that its overseas business has increased to the point that it is establishing a new division, Eaton International.

E. M. deWindt, corporation vice president, has been appointed president of the new unit, which will consolidate the company's foreign activities.

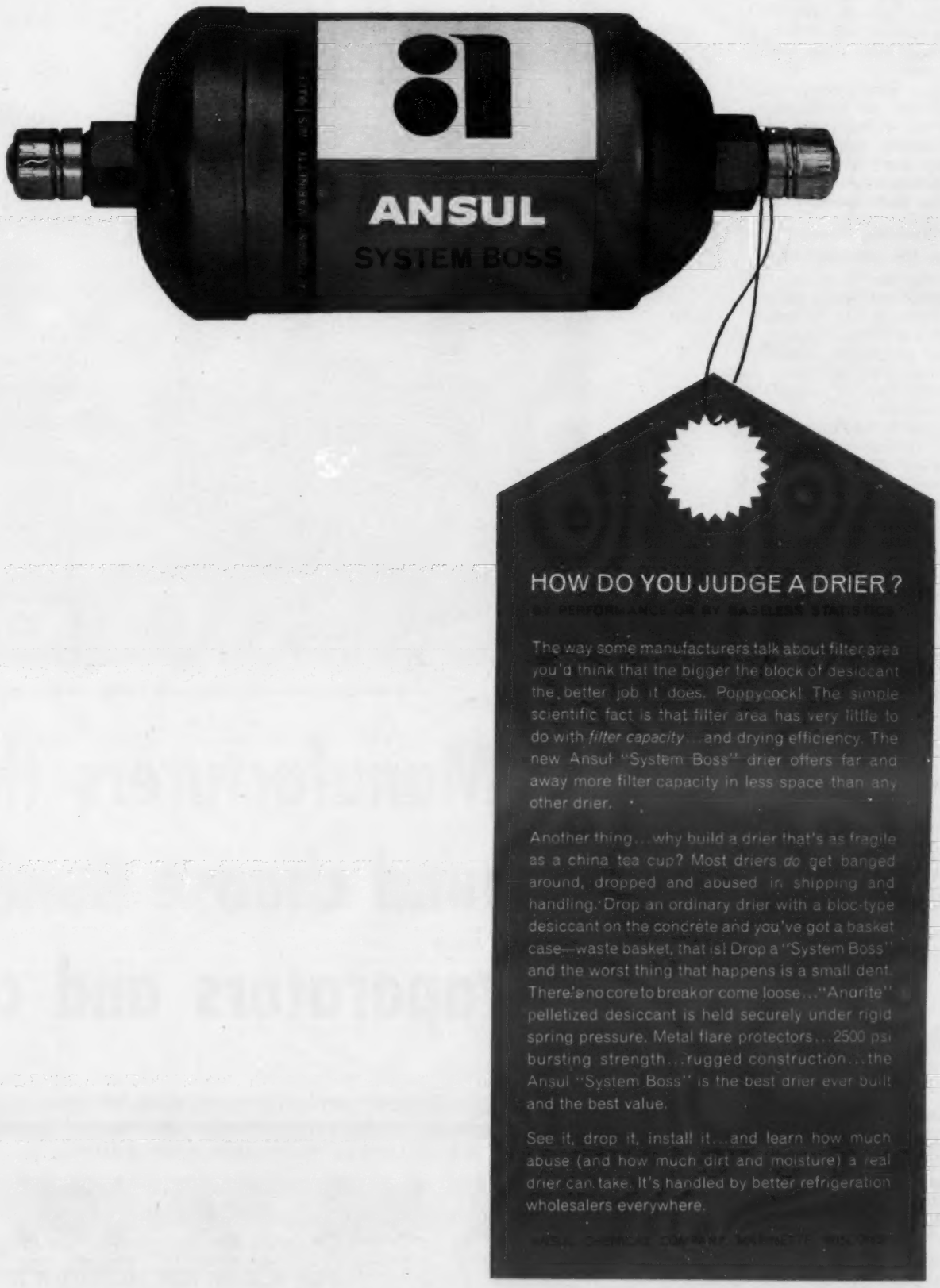
Alonzo B. Kight Named President of Borg-Warner Int'l

CHICAGO—Alonzo B. Kight has been elected president of Borg - Warner International Corp., L. G. Porter, executive vice president of the parent Borg-Warner Corp., announced recently.

Kight has been associated with Borg-Warner since 1948, serving first as a patent attorney for the parent company and later as administrative assistant to the president.

In 1955 he was elected vice president of Borg-Warner International, the position he held when his new post was announced.

This subsidiary handles the overseas manufacture, licensing, and export of Borg-Warner products.



HOW DO YOU JUDGE A DRIER?

BY PERFORMANCE OR BY GAUDY STATISTICS?

The way some manufacturers talk about filter area you'd think that the bigger the block of desiccant the better job it does. Poppycock! The simple scientific fact is that filter area has very little to do with *filter capacity*... and drying efficiency. The new Ansul "System Boss" drier offers far and away more filter capacity in less space than any other drier.

Another thing... why build a drier that's as fragile as a china tea cup? Most driers *do* get banged around, dropped and abused in shipping and handling. Drop an ordinary drier with a bloc-type desiccant on the concrete and you've got a basket case—waste basket, that is! Drop a "System Boss" and the worst thing that happens is a small dent. There's no core to break or come loose..."Anarite" pelletized desiccant is held securely under rigid spring pressure. Metal flare protectors...2500 psi bursting strength...rugged construction...the Ansul "System Boss" is the best drier ever built and the best value.

See it, drop it, install it...and learn how much abuse (and how much dirt and moisture) a real drier can take. It's handled by better refrigeration wholesalers everywhere.

ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN

WITT LOW TEMP.
Defrostair **COIL** WITH
EXCLUSIVE PATENTED
Automatic Electric Defrost System

DEFROSTS AUTOMATICALLY

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Witt exclusive Defrostair patented Heat Trap coil requires only a low cost single pole, double throw time clock for complete automatic defrosting. Easy low cost installation. Requires no re-evaporation or special plumbing. Completely automatic. Available in 21 models ranging in BTU capacities from 1400 to 44,100 at 10°T.D. Write today for complete Witt Catalog.

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AUSTRALIA

Industrialization, Ability To Export Machinery (Particularly Refrigeration) Bring New Horizon

By H. C. Tiller, Managing Director, Frigrite, Pty. Ltd.

MELBOURNE, Australia—In the words of our Department of Trade in Melbourne: "If anyone could sell Australia in 2,000 words, he would be a superman, and our Department of Trade would be pleased to pay him a tremendous salary."

I do not pretend to be a superman, nor to be sufficiently informed to sell you Australia in 2,000 words.

Only 10 Major Cities In Vast Country

The first problem is geography. The area of our country is approximately that of the U.S.A. But we have only 10 major cities spread over that vast area each of which have a population of more than half a million people.

Therefore, when people visit Australia with the intention of studying the refrigeration and air conditioning business, they necessarily come to Melbourne, Sydney, Brisbane, Adelaide, and usually see little more.

56% of Working Force Now In Manufacturing

Much less can they see the new horizons growing from the progress we have made. From a primarily agricultural country in 1939, we have become a nation which, today, employs 56% of her working force in manufacturing industries.

This growth of fabricating industries, which has erupted within the last 20 years (including wartime) is something that has been thrust upon us by our growing awareness of the shrinking boundaries of the world, and the distances in terms of flying hours to our friends and likewise to our avowed enemies and potential enemies.

Now Produce Nation's Needs In Many Fields

If we can go back to 1939, few Australians would have dreamed it was possible to manufacture our complete requirements for such items as automobiles, tractors, farm machinery, refrigeration, and such.

Today, with the assistance of techniques from friendly countries overseas, especially America, Australia has become self-contained in practically any of those items that can be called a mass production business.

This demand for secondary manufacture also has stepped up our exploration and treatment of raw materials—iron, steel, zinc and lead, plus many of the rarer metals, such as nickel, cobalt, and molybdenum.

Many Oil Refineries Developed Since 1939

Many oil refineries also have been built in Australia, so that the supply of oil in its various forms is much more readily available than if it all had to be imported, as was the case prior to 1939.

The advent of the oil refinery (and its by-product the petrochemical refinery) also has formed the basis of a tremendous growth in our plastics industry.

All these developments coincide, incidentally, with the shrinking of exports of our Australian wool to our best customers (namely, Britain and America) alongside a correspondingly increasing demand from Japan and other Asiatic countries for our agricultural products.

Because we buy practically nothing from Japan or Russia or China, it is obvious that some balance must be achieved by selling to countries which can offer exchange currencies we need.

This, in its turn, brings in the question of exports. For so long Australia has been a machinery importing country, and an exporter of raw materials and foodstuffs, that economists have thought it extremely difficult for Australia to become a producer and exporter of secondary manufactured products.

However, we are now prepared to show you that we can in Australia, without any fear or favour, manufacture for the export trade. Particularly in the refrigeration business we can make and sell such items as the U.S.A. does not any longer manufacture, but which we are able to offer to underdeveloped countries in the Pacific and Asiatic areas.

My Australian factory, for example, produces forced draft coolers for low temperature freezing jobs of heavy construction. They have been supplied to such international clients as Armour & Co., Swift & Co., and Vesteys (British packer) in the meat industry.

We also produce ice tanks for the manufacture of block ice, which we find still in demand in those Far Eastern countries where, as yet, the domestic refrigerator has not penetrated because of its high initial cost and the local low wage structures of the populace.

(My factory also produces commercial refrigeration and air conditioning equipment under American licensing agreements.)

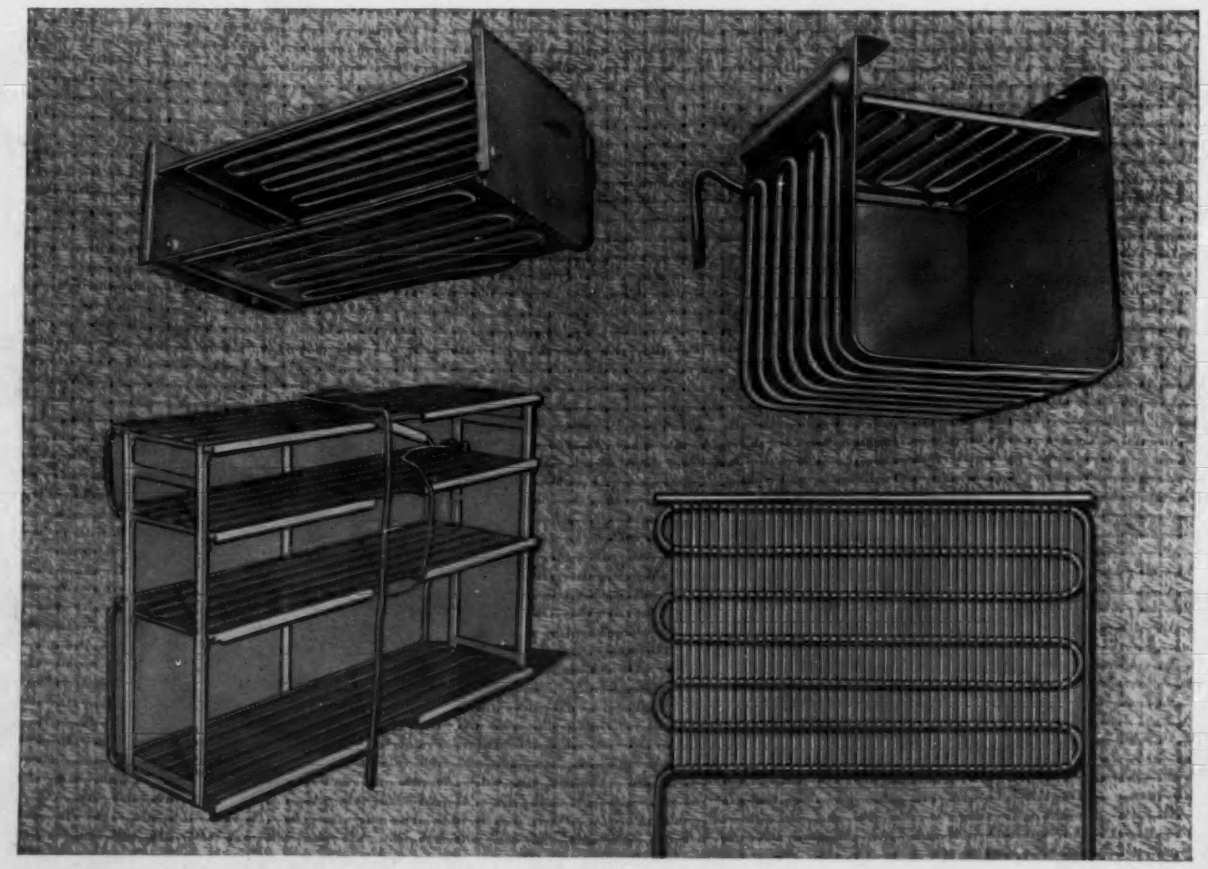
I do not propose here to attempt a selling job on any particular item, but rather to show how our horizons have risen in Australia in the past few years.

It is possible for us in Australia to visualize that the more we export forced draft coolers and ice making machinery, the more it helps the world-wide cooling industry.

U.S.A. licensors get a two-way financial result: First, in a direct sale on a low selling cost basis, and secondly, by virtue of their royalty arrangements which we enjoy together with them.

Additionally, we are filling a market vacuum which American manufacturers have abandoned because of shrinkage of demand in their own country and primary markets.

Furthermore, many refrigeration and air conditioning products



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Bundyweld, double-walled and brazed through 360° of wall contact.

SIZES UP TO ⅝" O.D.

NOTE the exclusive Bundy-developed beveled edges, which afford a smoother joint, absence of bead, and less chance for any leakage.

which are imported in the Australasian area probably could be manufactured more economically in our country—particularly if they involve such processes as steel fabrication, welding, shell and tube production, etc.

Take one small instance. The production of crushed ice from block ice. Market for such a product has grown in Australia, out of expediency. Low cost machinery to supply it was needed, and Frigrite filled that need.

Shortly after World War II, the sale of block ice dropped to 30% of its original volume, so that instead of scrapping its machinery, which probably would have been the case in America, our ice manufacturers dreamed up a method of crushing this ice and then, by use of a service coolroom with a service automatic conveyor, put it on sale at their works 24 hours per day.

Bags of crushed ice of suitable size in polyethene bags for use at parties, hotels—as extra ice for the home, outdoor picnics, etc. (the latter taking a large part of Australia's outdoor living)—became fashionable.

We profited by supplying this demand.

Nowhere else in the world do restaurants place ice water on the table as you find it in regular practice in the U.S.A.

However, the determined pushing of crushed ice in Australia has allowed our ice manufacturers to maintain a larger proportion of their sales than otherwise would have been possible.

Crushed Ice Plant Fills Need In Many Underdeveloped Areas

We feel that the Frigrite crushed ice plant has a destined market among the undeveloped countries whose populace cannot afford domestic refrigerators or commercial refrigeration at this stage, but which can afford suitable containers to hold ice for preservation of their foods and the supplying of cold drinks.

Our cost of production of these ice tanks, we feel sure, is well below relevant costs elsewhere.

Please be forgiving about my insistence on free-advertising this refrigeration product which Australia offers for export. American manufacturers quit making it long ago. England never did get into the swim. The Near East and Far East can use it. And we can use the money these exports secure.

In Australia our factory produces Tyler, Worthington, and several other U.S.A.-originated products under license. For these arrangements we are grateful, and your people should be, too. They have been mutually profitable.

George Taubeneck, our foremost American booster, often has said that Australia is his favorite country. He also has been quoted as saying that Australia "has the most exciting future of any nation on this churning globe."

We agree with George, and fully intend to make his predictions come true. Air conditioning is a case in point.

Often it is overlooked that Australia-New Zealand per capita income is one of the highest in the world. Our citizens are much like Americans, favor their products and standards of living, and admire their marketing methods.

That's why the relatively few Americans who visit Australia feel so at home here.

It's also a good reason why such indigenous American industries as air conditioning and refrigeration can go nowhere but up in our ruggedly individualistic, aspiring and inspiring, rapidly growing nation.

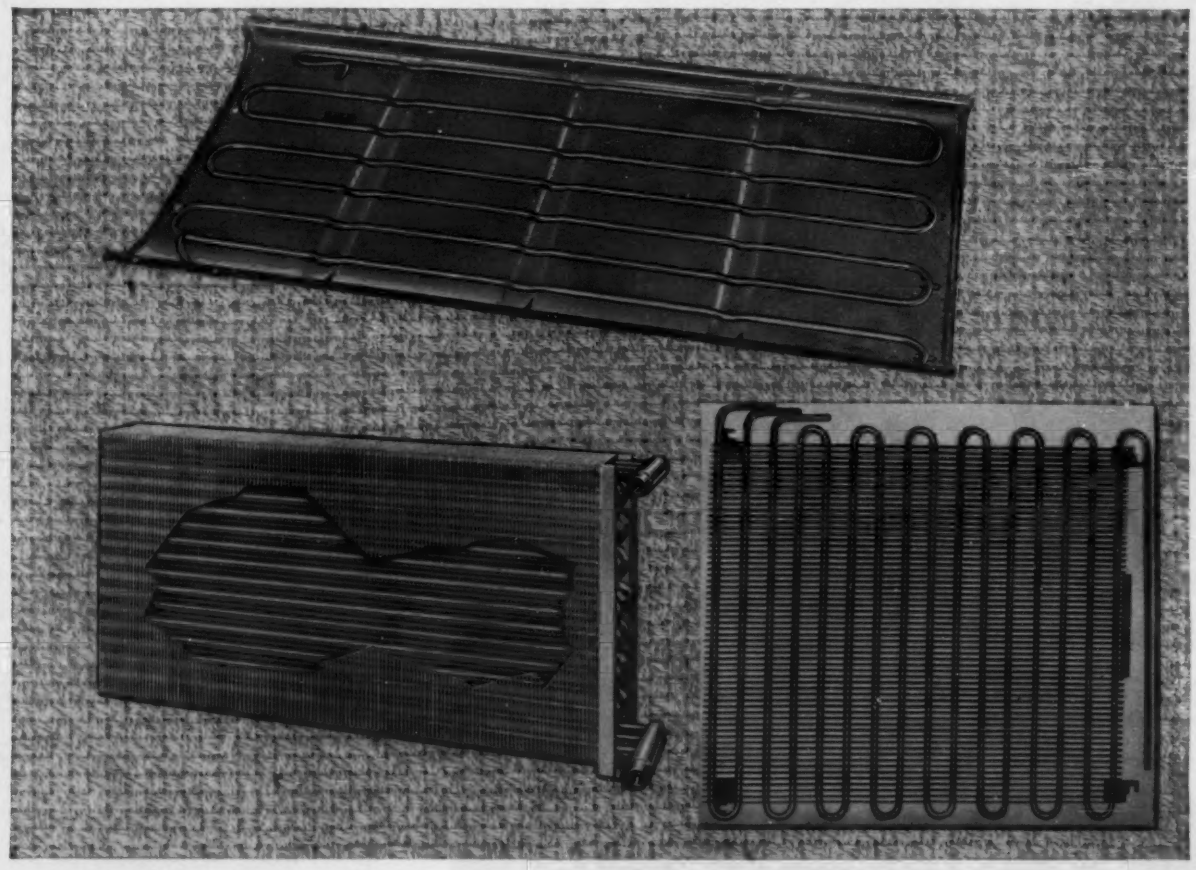
FRIGRITE'S H. C. (Bert) Tiller in handsome profile. (The beautiful blonde is the even handsomer Mrs. Tiller.) Born (1907) at St. Arnaud, Victoria, Bert Tiller grew up with a sympathy for farming that made him eager to solve problems of dairyfarmers —which he did when he pioneered refrigerated bulk milk handling in Australia in 1956.

HIS ARMY SERVICE (Captain of R.A.E., Second A.I.F.) gave him a personal appreciation of such discomforts as can be solved by air conditioning. Little wonder, from this background, that his Frigrite company has thrived on the three-pronged spear of commercial refrigeration, air conditioning, and farm milk equipment.

BERT FOUNDED Frigrite in 1945 with his brother-in-law, the late Dave Davies. He made ties with Tyler Refrigeration International in 1956; set up manufacture of Barber-Colman air distribution products in 1957; extended his air conditioning activities in 1958 by affiliating with Worthington; expanded his sales channels in 1958 and 1959 by absorbing Robert Taylor Pty. Ltd. and Wickers Holdings Ltd. in Victoria.

PROGRESSIVELY through the years he has opened new factories in Brisbane and Melbourne, and branches in Sydney and Adelaide. Last year he negotiated mergers with Coombs Bros. Pty. Ltd., and with Polson Holdings Ltd. in Adelaide. His close knowledge of overseas trends has come from regular trips abroad (eight since 1950) to U.S.A., England, and the Far East.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.



Condensers fabricated with Bundyweld Tubing give top performance at low cost.

Plants in Australia, Brazil, England, France, Italy, Japan and West Germany give you fast, complete service

No matter where your plant is located – no matter what kind of evaporators and condensers you build – you can benefit from Bundy's experience as the largest manufacturer of refrigeration tubing in the world. Here's why:

Better engineering: Bundy engineers are specialists in tubing design. They may be able to suggest changes that will give you a better product . . . and cut costs, too.

Better tubing: Only Bundy has had years of experience manufacturing double-walled tubing from a single steel strip. That's why Bundyweld is the standard of the refrigeration industry. Bundyweld is leakproof by test – has high thermal conductivity, high bursting strength.

Economical mass-fabrication service: Bundy technicians use specially designed machines to give you close-tolerance serpentine bends at low unit cost. You can depend on Bundy for any bending, expanding, swaging or other fabricating your tubing requires.

Whether you are in the refrigeration, automotive – or any business requiring quality small-diameter tubing – it will pay you to call in Bundy. *Write, wire or cable us today.*

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WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING

INDIA

Size, Extreme Poverty, Democratic Government Seen as Obstacles To Becoming a Modern Nation

By Mohan T. Advani, President,
Refrigeration & Air Conditioning Trades Association

BOMBAY, India — Before I endeavor to project India's view of the *Future,* I must give you a fleeting glance of its scintillating *Past.*

Deep through the corridors of Time . . . back to about 3000 B.C., when Indian civilization, now over 5000 years old, loomed within the scope of recorded history—

And thence, through Indian civilization at its zenith, the grandeur of Mohen-jo-daro . . . through the Golden Age of science and achievement, whose discoveries *then* were indeed the precursors of many of our inventions *now,* including the basic principles of refrigeration for food preservation and human comfort . . . through the periods glorified by India's great epics, the Mahabharata and the Ramayana . . . down the years of struggle and strife under the changing influence of religion . . . Hinduism, Islam, Jainism, Buddhism and Christianity . . . through conquests and re-conquests by the Greeks, the Persians, the Afghans, the Moghuls, the Portuguese, the French, the British, and onwards right up to the dawn of Indian Independence . . . Aug. 5, 1947.

The Empire of Asoka, two centuries before Christ; the zenith of the great Moghul rule three centuries ago; and then the rule of Imperial Britain—these are the three periods in Indian history when the nation was welded together through concentrated, centralized political control.

Prospect of Permanence

In between, there was a succession of rising and falling kingdoms and principalities.

The establishment of an independent, democratic state in 1947 offered for the first time the prospect of permanence. The present Republic of India shows far greater stability and promise of continued unity than the sub-continent has seen before.

In fact, India stands unique today amongst all the nations except Japan—in the great arc of West, South and East Asia—as the only stable, free and democratic nation.

India, with its 438 million people, is the world's most populous democracy, second only to China in population, and in area is the world's seventh largest country.

It is the land of the Aryans whose division of society into priests, warriors, merchants and tradesmen became ritualized under Hinduism, into the Caste System which still persists in India.

The Hindu attempts to see the "oneness" that lies behind such extremes as black and white, good and evil, plus and minus. Thus as a philosophy, Hinduism adapts itself very easily to change. But as a religion, with long accepted traditions, and with the ideas of caste, Hinduism also resists change.

"India is a major battleground," declares M. Advani.

This mental conflict, this split personality, has pursued us through the centuries and we struggle against it even today.

The mere physical task of transforming India into an effective modern nation is enormous, and the obstacles are great. Our biggest problem is our size. The second problem is our extreme poverty. The third problem is the fact that we have chosen the democratic form of government whose system of checks and balances infinitely complicates the task of development.

Yet the experiment is critical. For, a great and decisive battle is now being waged in the world between totalitarian and democratic methods of solving the problem of poverty.

Victory or Defeat of Democracy Will Be Registered Here

India is a major battleground, and the victory or defeat of democracy will be registered in that country.

The new India is dedicated to the proposition that it is possible to govern the country, reform the abuses of its society, and to modernize it economically by means of a government which is not authoritarian, which operates in accordance with the Rule of Law, which tolerates a maximum of diversity amongst its subjects, and which, though attempting to lead, respects the right of the individual to criticize and, if he chooses, to work for a different form of government.

Passed Over by Industrial Revolution

Asia was passed over by the Industrial Revolution to which Europe and America can trace their present advancement.

Nevertheless, most people in Asia are like most people in America and Europe. They like to have enough to eat; they prefer antibiotics to dying of disease; they even enjoy the movies and the comics.

As Western material standards more and more are made vivid to them by the steadily improving means of communication, they demand more and more that these material benefits shall be made available to them, too.

Economic development has become in India, as in almost all the countries of Asia, the dominating question of the day.

India has chosen to achieve

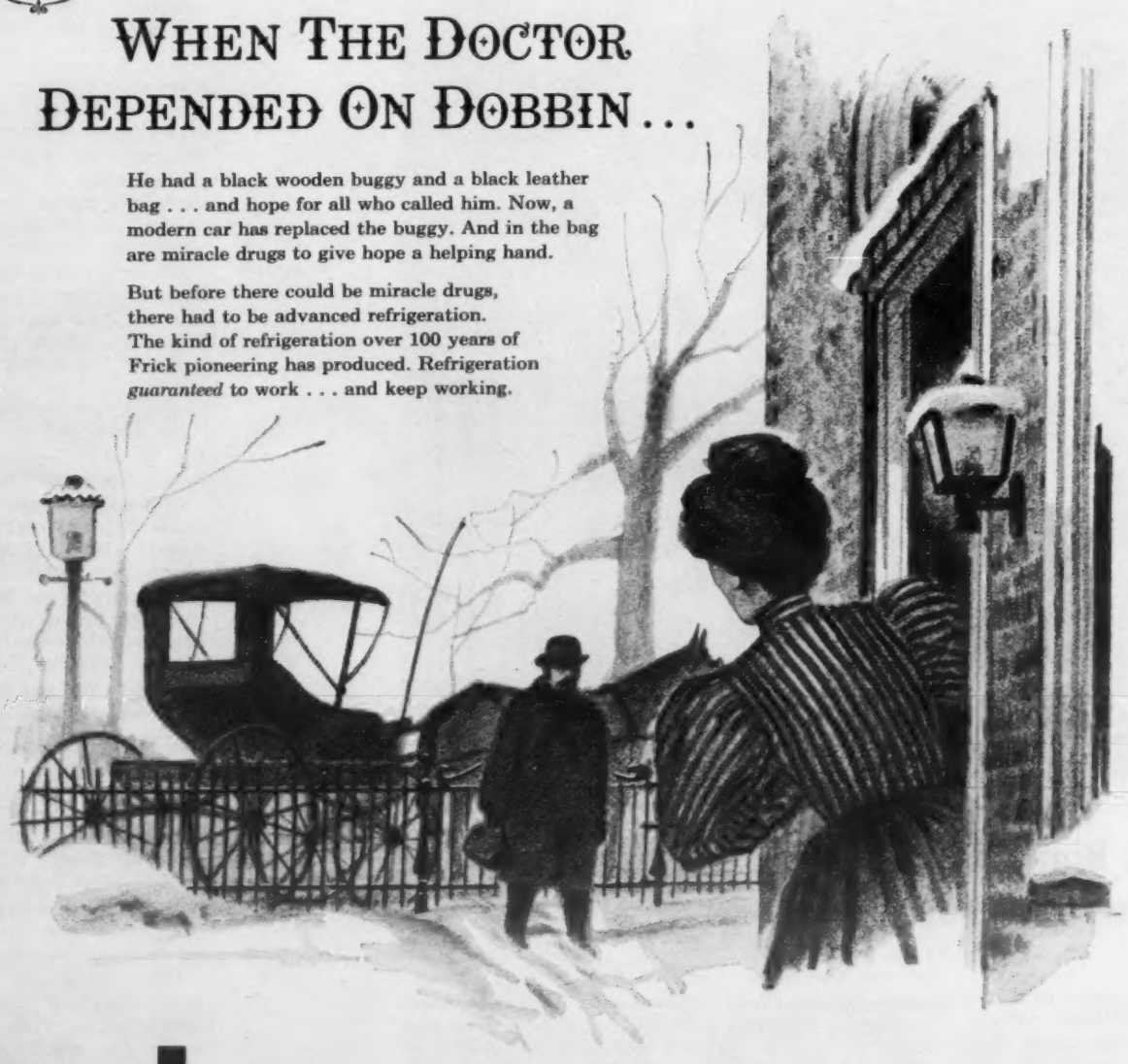
(Continued on Page 27)

1909

WHEN THE DOCTOR DEPENDED ON DOBBIN . . .

He had a black wooden buggy and a black leather bag . . . and hope for all who called him. Now, a modern car has replaced the buggy. And in the bag are miracle drugs to give hope a helping hand.

But before there could be miracle drugs, there had to be advanced refrigeration. The kind of refrigeration over 100 years of Frick pioneering has produced. Refrigeration *guaranteed* to work . . . and keep working.



1961

FRICK FOOD STORAGE PROGRESS

Freeze-drying—a revolutionary new method of food preservation—was developed with the aid of a custom-engineered Frick refrigeration system. Food is dehydrated in a vacuum chamber at –40°F at the Food Machinery and Chemical Corporation's new test plant in San Jose, California. The excellent results in this new process promise sweeping changes in the entire food industry. This is another example of Frick special application engineering that has been a quality symbol for more than a century.

FRICK COMPANY, Waynesboro, Pennsylvania

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A proud past . . . a progressive future FRICK

VIRGINIA Chemicals®

REFRIGERATION BULLETIN

"Helpful facts for the serviceman"

ANSWERS TO COMMON WATER TREATMENT PROBLEMS

Water obtained from natural sources is not really pure. It contains foreign matter in varying forms and amounts. This may be present as suspended solids or solids and gases in solution. The conventional dividing line between soft and hard water is 200 ppm (parts per million) of these impurities—the higher the ppm, the harder the water.

It is these substances that cause scale buildup. In cooling with water, evaporation takes place, causing increasingly higher concentration of the impurities. Eventually the solid matter drops out as a sludge or deposits on the metal surfaces, forming scale.

How to identify problem scales

Prepare a dilute solution of solid or liquid scale remover in a glass jar or bottle (1 tsp. of solid scale remover per ½ pt.—1 tbsp. per ½ pt. of liquid). Chip small pieces of scale from the unit, drop them in the solution and observe the action.

Magnesium or Calcium Carbonate Scale
Usually of light color. Will bubble vigorously in the solution.

Iron Scale
Usually a brown or reddish color. Bubbles slightly or not at all. Turns solution to a yellowish color.

Oily Scale
Can be any color. Little visible action in solution, but an oily ring may appear on solution surface.

Sulfate and Silica Scale
Can be any color. Usually are extra hard and flinty. Little or no bubbling in solution. Scale of high silica content may have a glossy surface.

HOW TO REMOVE THEM

Magnesium or Calcium Carbonate Scale
Can be easily removed with either liquid or solid scale remover.

Iron Scale
Requires liquid scale remover. Use 4 gal. per 15 gal. of sump water. Stop fan to let water temperature rise to 100-110°F but not over 120°F. Clean at this temperature for best results. About 4 hr. needed.

Oily Scale
First add 1 box of Dash detergent per 100 gal. of system water. Run 15-20 min. Be sure foaming is not excessive. Leave the Dash in the solution and add recommended dosage of solid (5 lb. per 10 gal. of water) or liquid (1 gal. per 15 gal. of water) scale remover.

Sulfate Scale
Add 1 lb. of baking soda per gallon of sump water. Circulate for 8-12 hr. Then drain, rinse and refill system. Add liquid scale remover—4 gal. per 15 gal. of water. Circulate 2-4 hr., using test papers regularly to check cleaning strength.

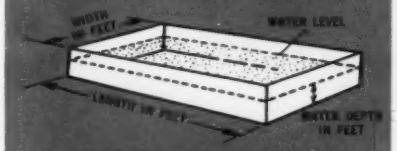
NOTE: *If any of these treatments fails, a second attempt should be made. A second failure would indicate the scale can be removed only by harsh chemical treatment or mechanical means.*

• • •

How to retard scale

"Virginia" Scale & Corrosion Inhibitor. Glassy polyphosphate crystals provide slow, controlled solubility. No mechanical feeding devices are needed. Inhibitor holds scale-forming solids in suspension or solution. Deposits thin protective film on metal to stop oxidation. Has neutralizing effect on weak acids.

HOW TO CALCULATE AMOUNT OF WATER IN A SYSTEM

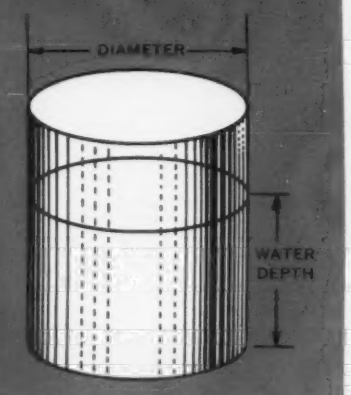


RECTANGULAR TANK OR SUMP

Measure (in feet) the length, width and water depth. Then length x width x water depth x 7.5 equals gallons of water.

EXAMPLE: If sump is 5 ft. long, 4 ft. wide, and water is .5 ft. deep, the calculation is as follows:

5 x 4 x .5 x 7.5 = 75 gal.



ROUND TANK

Measure diameter of tank and depth of water in feet. Then diameter squared x water depth x 6 equals gallons of water.

EXAMPLE: Tank has diameter of 3 ft. and water is 3 ft. deep.

9 x 3 x 6 = 162 gal.

See back page for full line of refrigeration products ▶

VOL 93 15

FOR TROUBLE-FREE MAINTENANCE USE "VIRGINIA" REFRIGERATION PRODUCTS

"Virginia" Scale & Corrosion Inhibitor

Reduces scale buildup sharply, keeping scale-forming solids in suspension or solution. Less scale, less labor, lower maintenance costs.

"Virginia" Liquid Scale Remover

Ideal for heavy scale. Dissolves 3 lb. of scale per gal. Works fast. Inhibited to prevent metal damage. (Anti-foam agent and test papers included with every container.) Light shatterproof throwaway container for easy handling and easy pouring.

"Virginia" Solid Scale Remover

Highly inhibited—safe for use on galvanized, dipped zinc and aluminum water-cooled equipment. Destroys algal growth. Contains 96% sulfamic acid.

"Virginia" Algae-Cides

Adaptable to the special use requirements in (1) towers, (2) evaps, (3) air washers, and (4) ice machines and drip pans. A new No. 4 high-potency formula kills the tough resistant types of algae.

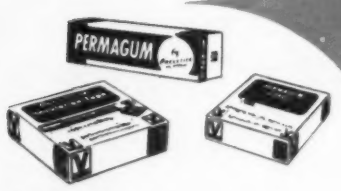
Du Pont FREON® Refrigerants

Nonflammable, nontoxic, stable, odorless
Best known for premium quality. Most widely used refrigerants in the industry. "Virginia" is the only national sales agent for Du Pont "Freon". F-11,* F-12,* F-13,* F-22,* F-113* and F-114* are available in cylinders of all popular sizes.

**Du Pont registered trade mark*

"Virginia" Ice Machine Cleaner

Eliminates slow freezing, bad taste and odor. Will not injure enamel or polished metal surfaces. Highly effective on automatic cube or flake ice machines.

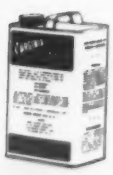


Presstite Insulation

Tape—ideal for stopping pipe drip. Adheres to any dry surface. *Permagum slugs*—seals seams, copper tube, BX and conduit entries against moisture. *Cords*—nonstaining, odorless, shaped for use on display cases, freezers, room coolers, etc.

VascoCel Insulation

Preformed of soft, durable, clean, odorless Neoprene. Cuts time and labor costs sharply. Closed-cell structure makes condensation impossible. Ozone, oil, acid, and fungus resistant. Application temperature range 0-220°F. Available in 3/8", 1/2" and 3/4" wall thickness.



"Virginia" Degreasing Solvent

No. 10 has low toxicity, is noncorrosive and fast drying. High flashpoint of 154-160°F reduces fire hazard; dielectric strength 20,000 volts.

Ask about "Virginia" "Freon 11" Cleaning Solvent for motor burnouts.

"Suniso" Refrigeration Oils

G Oils are improved for greater stability and lower waxing point. Available in 3G-150 SSU, 4G-300 SSU, and 5G-500 SSU. Dual Inhibited oils have same low wax point, resist breakdown and copper-plating even more effectively.

Can-O-Gas® Packaged Refrigerants

Throwaway cans—full line in screw-top or clip-top cans. Wide variety of preweighed charges, accurate to ±4 grams. Selection of Freon* gases, sulfur dioxide, and methyl chloride.

Carried by wholesalers everywhere. Order from one nearest you or contact Refrigeration Division, VIRGINIA SMELTING COMPANY, West Norfolk, Va.
Available in Canada and many other countries

"Virginia" is the only national sales agent and authorized repacker for Du Pont's "Freon" Refrigerants.

D77 Form 523

Printed in U.S.A.

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The First Plan

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this goal of economic development through a series of Government directed Five Year Plans, with the stated objective of building up a mixed economy —an economy in which private enterprise and State-owned or socialized enterprises work hand in hand.

It is a particular mixture, but seems to be the most practical answer to our peculiar problems.

In fact, neither an advanced capitalist country like the United States nor a highly organized economy such as that of the Soviet Union has an economic formula that is immediately applicable to India.

The Constitution of India, in its preamble, has declared that it aims at securing for all its citizens:

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity;

FRATERNITY, assuring the dignity of the individual and the unity of the nation.

Industrial policy, as other policies, must therefore be governed by these principles and directions.

3 Classes of Industry

The Government of India has classified industries into three categories. These categories inevitably overlap to some extent. In the first category are basic industries, the future development of which is the exclusive responsibility of the State. These are such industries as:

Arms and Ammunition
Atomic Energy
Aircraft
Air Transport
Railway Transport
Shipbuilding
Telephone & Telegraph equipment, etc.

The second category consists of industries in which the State generally takes the initiative in establishing new undertakings; but in which private enterprise also is expected to supplement the effort of the State. This category comprises:

Steel
Machine Tools
Fertilizers
Synthetic Rubber
Antibiotics and other essential drugs
Ferro alloys and tool steels
Road transport
Sea transport, etc.

The third category includes all remaining industries. Their future is left to the initiative and enterprise of the private sector.

State Encourages Private Development

It is the policy of the State to facilitate and encourage the development of these industries in the private sector in accordance with the programs formulated in the successive Five Year Plans.

When there exist in the same industry both privately and publicly owned units, it is the accepted policy of the State to give fair and non-discriminatory treatment to each type.

Since 1951, three successful Five Year Plans have been framed for coordinating and speeding up the programs of economic development.

The First Plan (1951-1956) sought to strengthen the economy at the base: first, by repairing the damage caused by war and the partition; and, secondly, by providing certain essential social and economic overheads which would make subsequent rapid development possible.

The Second Plan (1956-1961) aimed at accelerating the rate of growth of the national economy, and provided for a larger increase in production, investment and employment.

It laid special emphasis on the building up of basic industries.

The total investment in the economy during the first two Plans was over $21 billion ($7 billion in the First Plan and $14 billion in the Second Plan). Investment in the public sector was approximately $11 billion and in the private sector $10 billion.

The national income rose by 18% in the First Plan, and by about 20% during the course of the Second Plan. Over the 10 years 1951-1961 national income (at constant prices) has increased by about 42%, per capita income by about 20%, and per capita consumption by about 16%.

The infra-structure of the economy has been strengthened considerably — creating conditions for more rapid economic development in future.

The Third Plan, just commencing, provides for a total investment of just under $22 billion, of which about 60% will be in the public sector and approximately 40% in the private sector.

Under these Five Year Plans heavy investments have been made not only in industry, but also in mining, agriculture, irrigation, power generation, transport, communications, and social services — education, housing, medical care and similar other basic needs.

India's balance of payments problem, unlike similar problems of other countries, reflects the developmental character of the country's economy. Therefore one shouldn't take an alarmist view of the situation.

It must be emphasized that, for the most part, this drain on foreign exchange resources is not the result of any unhealthy trend in the Indian economy.

On the contrary, it reflects unexpectedly vigorous expansion, particularly in the private sector.

Since India is deficient in technical know-how and skill, private foreign capital which brings with it know-how and trained personnel, is most welcome.

The fields in which private foreign capital is welcome include:

Manufacture of industrial machinery.

Metals such as aluminum, copper, ferro silicon, etc.

Engineering goods such as electric motors, transformers, instruments, watches, refrigeration machinery, etc.

Chemicals and fertilizers.

In the field of refrigeration and air conditioning equipment, India has quite an impressive development programs.

A number of projects for the manufacture of compressors have been sponsored by firms in India, in technical (and, in many cases also, in financial collaboration) with American manufacturers.

Today India is proud of its achievements in many fields.

Encouraged by achievements in the wake of the First and the Second Five Year Plans, and now on the threshold of the Third Five Year Plan, India views the Future with sanguine hope that the time is not too distant when it will be in a position to move forward without foreign aid and measure up to its full stature as an equally strong member in the comity of the free nations of the world.

New addition to the famous Mine-to-Market Quality Line

PHELPS DODGE WROT FITTINGS for Air Conditioning and Refrigeration Tube

Phelps Dodge has expanded its line of products for the air conditioning and refrigeration industry to include a wide selection of wrot solder-type fittings. In keeping with modern specifications, both fittings and tube can now be obtained from Phelps Dodge—a single dependable source of supply.

PD wrot fittings are available in sizes ranging from ⅛-inch to six inches. All fittings are protectively packaged to assure factory-clean condition.

Initial warehouse stocks have been distributed to five key centers, Boston, Chicago, Los Angeles, Houston and Tampa, Fla., for fast, convenient service. Order through your Phelps Dodge wholesaler.

A copy of the new PD fittings catalogue is ready for you. Use the coupon below.

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Please send me your new fittings catalogue.

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Quality tube and fittings sold the quality way—through authorized refrigeration wholesalers!

PHELPS DODGE COPPER PRODUCTS CORPORATION

300 Park Avenue, New York 22, N. Y.

COMMON MARKET

Europeans Design Air Conditioning To Muffle Noise, Lessen Air Movement; Contractor Is Industry King Pin

By B. Tunzini, Managing Director, Tunzini Fabrique

PARIS, France—The face of Europe is undergoing great changes. A new true European concept is replacing the national rivalries which were marked by incessant conflicts.

In the economic field, the Common Market has become a reality for the six countries, known as the "Inner Six," which decided to pool their economic resources and strength as a result of the Treaty of Rome. These countries are Belgium, France, Germany, Holland, Italy, and Luxembourg.

Soon Greece and Turkey will join the Common Market. *Editor's note:* Greece already has.

Great Britain, which did not show much faith in the future of the Common Market at its start, now is revising its attitude due to the inherent dangers which she would face if not linked to it in some manner.

Great Britain now seems willing to compose its differences with the Common Market although she tried vainly to oppose it with the formation of the European Free Trade Association known as the "Outer Seven."

Too Early Yet for Political Unity

It is still too early to speak of political unity in Europe. We should remember, however, that two of the greatest European powers today, Germany and Italy, did not exist as nations a century ago. Instead, they were made up of individual states which were politically independent and often fighting among themselves.

This may entitle us to a certain amount of *optimism* towards the future.

It is for economic reasons that the six European countries have created a Common Market, the size of which is comparable to the United States or Soviet Russia—or even larger if we consider a market of all the countries on the continent.

U. S. Influence on Common Market Growth

The influence of the United States has been important in this economic evolution since the war. By opening their frontiers freely, by inviting engineers from the entire world to come and study their methods, by financing the reconstruction of our means of production in devastated countries, the Americans have enabled us to reconsider our problems in the light of the new industrial order.

This order today lies between the one we knew and that of the United States.

So far I have not yet touched upon air conditioning. One has a tendency to think that air conditioning is a typically American contribution given to the entire world after the war, and that it will remain as a characteristic mark of this period's civilization.

Air conditioning is a technique which has been in use in the United States as well as in Europe since the beginning of the century. We can mention as an example, in our country, the installation made more than 50 years ago by Credit Lyonnais, one of our greatest banks, for its employes' comfort.

During the second half of the 19th century and until 1939, many European physicists and engineers, among them Peclet and Riestchel, laid the groundwork for this new industry of engineered climate by their research and teaching.

Thus European technology was instrumental in getting the air conditioning industry started.

From 1920 to 1939, many scientific congresses and technical meetings were devoted to this new industry, which became a subject of passionate debate.

Although we had in Europe excellent engineers who specialized in air conditioning long before the last war, the limitation of the market did not allow the creation of a large air conditioning industry.

Air Conditioning Has Come of Age In Europe

What has happened since? Twenty years have passed and now air conditioning has come of age in Europe, as it is currently in the United States.

In the United States, air conditioning enjoyed a rapid development not only because of new production techniques requiring closely controlled engineered climate, but also because of the extreme variations of the natural climate.

In Europe air conditioning is used principally in industries such as drugs, food, textile, chemical plants, nuclear research laboratories, and power plants.

Manufacturing processes in these industries require extremely severe controls of temperature and humidity.

No longer is a hospital erected without air conditioned operating rooms and specialized wards.

The consideration of whether to include air conditioning in new buildings being erected in many European cities did not take place until recently.

Plays Vital Role In Eliminating Dust, Noise

Even if the development of air conditioning is not done at the same pace in all European countries because of varying climate conditions, we must note that air conditioning is not only a means to control temperature, but that it plays a vital role in the elimination of dust and noise, those two plagues of today's modern cities.

Our techniques and our facilities are closing in on those of the United States. For simple installations, not requiring engineering studies, packaged equipment most often is used.

Packaged equipment and window air conditioners are built in most European countries now at prices slightly higher than in America.

Large installations requiring engineering designs result in the use of the same equipment as in

NOW DIRECT FROM THE FACTORY
A DISTRIBUTOR SALES PROGRAM TO HELP

YOU SELL

AMPROBE...THE LINE THAT GIVES YOU PROTECTED PROFITS

Amprobe...the world's most-complete and widely used family of snap-around volt-ammeters, will now be warehoused, sold and serviced by direct factory representatives **right in your country.** You will do business with your own countrymen; thoroughly trained men who are fully aware of local customers and markets.

A new departure in export marketing for the industry, this policy also means you can now provide **off-the-shelf** delivery of precision Pyramid test instruments at lower costs to electricians and plant and air-conditioning servicemen, yet at a **higher profit to you** than ever before! And, when you sell Amprobe you get a complete program to help you.

ONLY AMPROBE'S JOBBER-PROFIT PROGRAM GIVES YOU ALL FIVE!

1. 100% PROTECTION. Any Amprobe sold **anywhere** makes a profit for a distributor **somewhere.** No one from the factory sells in competition with you, so you can sell Amprobe **everywhere.**

2. PRODUCT DEVELOPMENT. Like the new Cable Tracer, Pyramid research is constantly developing new products to bring you more sales and more satisfied customers year after year.

3. SALES TRAINING. Amprobe furnishes your salesmen with a complete supply of manuals, catalogs, bulletins and other instructional materials—printed in your language. Our representative will make sure your men know how to use those materials properly and **profitably!**

4. CONSISTENT ADVERTISING. Amprobes will be presold for you through a schedule of dramatic advertisements in the major trade publications your customers read...printed and published in your country.

5. SALES INCENTIVES. Amprobe will conduct numerous timely merchandising programs to motivate your outside salesmen, countermen and customers.

Now one man can trace cables fast

CABLE TRACER

Enables one man to trace conductors 10 times faster than ever before and leave his helper free to finish other jobs quickly and profitably. Lets servicemen and electricians search—and unmistakably identify—up to ten separate circuits simultaneously, even in the dark and when color coding is absent or obscured by age and dirt. A pocket-size tracing system in itself, the Cable Tracer also tests for open and shorts.

Many opportunities for representatives and distributors are still available. The rapid success that Amprobe has achieved in the U.S.A. is being repeated today in other countries in both hemispheres. You can be part of this progress—if you act now. If you now sell Amprobes, you'll want to learn about the new program first-hand; if you do not, you'll need complete information. Get it today by writing to Mr. Fred M. Danning, Export Sales Manager, Pyramid Instrument Corp., 630 Merrick Road, Lynbrook, New York. Cable Address: AMPROBE LYNBROOK.

MANY PROFITABLE EXPORT MARKETS STILL OPEN. GET FACTS TODAY!

CANADIAN SALES DIV.: ATLAS RADIO CORP., LTD., TORONTO • BRITISH SALES DIV.: H. J. BALDWIN CO., LTD., LONDON, ENGLAND.

America, such as central systems, zone air conditioners, fan-coil units, induction and double duct systems.

The systematic application of air conditioning to new office buildings in the U.S.A. has led to the development of high speed systems, principally induction and double duct, with the aim of reducing the size of air distribution and of obtaining the simplest possible systems.

European Customer More Demanding Than American

Generally speaking, the European customer is more demanding than the American. Noise level requirements in particular often are more severe in Europe than in the U.S.A.

The average European also is more sensitive to air movement, and reacts very closely to his immediate physical surroundings.

These are the reasons why we have been making studies of fan-coil and induction units to produce equipment particularly silent.

As a result, the installations which we need cannot be copied and manufactured directly from similar American equipment, but have to be adapted for our local market.

Professional Structure Different

In the United States the professional structure of the air conditioning business is far different from what it is in Europe.

In America consulting engineers give assistance to architects and customers from the very beginning of the layout study. The consulting engineers write the specifications, and are responsible for the over-all characteristics of the installation and of the equipment.

The manufacturer builds and sells equipment. The contractor's principal responsibility is to direct the actual installation according to industry practices.

In Europe, on the other hand, consulting engineers are used only in a minority of cases, with the exception of Belgium, which has been under strong American influence.

However, we must recognize that the current trend is for the European architect and ultimate customer to obtain advice from a consultant for problems with which they are not familiar.

This trend has been accelerated by the American companies which are putting up new office buildings in Europe and which prefer to work with the methods they use at home.

Preliminary studies by consulting engineers in Europe are limited by the shortage of fully qualified consulting engineering firms.

This is why the most highly

What Can America Contribute? Contractor's Knowledge of Field

trained specialists are working directly for the contractors who install the actual equipment.

In Europe, the contractor remains responsible for the results. This is why, if a contractor wants to quote a firm price without taking an abnormal risk, he is practically forced to re-calculate the original work done by the consulting engineer, thus making double work.

In addition, and very often, the architect or the client will ask a contractor to make preliminary studies for an installation, without any insurance to the contractor that he will be awarded the contract.

This method brings high expenses for the best-known contracting firms.

Personally I am in favor of the preliminary study being made by a competent consulting engineer, with the installation made by a qualified contractor, who will then be able to devote his full activities to his basic job.

A close cooperation between the consulting engineer and the contractor should take place during the installation, so that any required changes in the installation can be made in common and to the full benefit of the client.

In Europe, manufacturers of air conditioning equipment are contractors at the same time. They are specialists in their own field.

Common Market Should Aid Growth of Specialists

The creation of the Common Market, however, should allow the formation of well-equipped and specialized business entities in the years to come.

Compressors are manufactured by companies which have large facilities, and for which refrigeration only makes up part of the total volume.

These manufacturers make refrigeration installations and, generally speaking, are subcontractors of air conditioning contractors.

A good example of this is Societe Worthington in France, which manufactures compressors in its highly specialized Le Bourget plant, sells them and installs them for industrial refrigeration installations, or to air conditioning contractors.

Today the manufacturer-contractor in Europe is a complex and highly coordinated entity created to solve manufacturing, engineering, erection, and after-sales problems simultaneously.

This type of organization often surprises the American businessman, who is more accustomed to working with highly specialized firms.

Upon reflection, however, it is easy to understand.

Need More Contractor Know-How

I think I can say that Kirby Saunders, well-known air conditioning contractor from New York, was surprised to find so much competence in our engineers and such a variety of facilities within our own organization.

With much modesty, he asked me, "What can I bring to you?"

I should have answered him, and I am telling it to you: "The knowledge that American contractors have of their field."

The structure of the market has a deep influence on the size and the form of a contracting organization.

In the United States some contractors only are interested in jobs of a certain size, more than $200,000, for example, and organize their business accordingly.

With us, because of the smaller present size of the markets, our contractors have to be organized to handle jobs from window units to large centrifugal installations of several hundred tons.

This is why our company is

(Continued on next page)

WORLD'S MOST WIDELY USED
ELECTRICAL TEST INSTRUMENTS

AMPROBE®

THE ONLY LINE THAT COVERS ALL ELECTRIC-TEST NEEDS

The original pocket size
snap-around volt-ammeter-ohmmeter

AMPROBE RS-3

3 current ranges. 3 voltage ranges. Ohmmeter specially designed for the maintenance field. Rotary scale for faster reading and greater accuracy. Pointer-Lock "freezes" pointer at reading. Advanced printed circuitry laughs at rough handling. Advanced movement design—new internal core magnet with self shielding characteristics. By itself, the Amprobe RS-3 handles 90% of your test needs. With the Amprobe Deca-Tran and Amprobe Energizer it covers EVERY testing situation.

AMPROBE RS-1

The economy snap-around volt ammeter with many features of the great RS-3 including rotary scale, pointer lock, printed circuit, and advanced movement design. 4 current ranges. 2 voltage ranges.

AMPROBE JR.

The advanced voltage tester that gives you current, too. Available in seven models, ranging from 10 amps to 100 amps in either 125/250 or 150/600 volts. Choose the model that fits your job.

AMPROBE
TEST-MASTER KIT

Keep all your electrical-test tools right at hand with this rugged, genuine cowhide leather carrying case. The Amprobe **Test-Master Kit** contains either the RS-3 or RS-1, the Amprobe **Deca-Tran** (extends amperage readings 10x; as high as 1200 amps), the Amprobe **Energizer** (multiplies sensitivity of any Amprobe 10x for readings on small appliances and fractional h.p. motors), and a separate covered section to hold your small hand tools within easy reach.

Model TM-33 (with the RS-3):
Model TM-11 (with the RS-1):

PYRAMID INSTRUMENT CORPORATION, LYNBROOK, N. Y. WORLD'S LARGEST MANUFACTURER OF SNAP-AROUND VOLT-AMMETERS.

Common Market--

(Continued from preceding page)

steadily engaged in 20 to 40 installations ranging from one erector on the field to several hundred at the same time.

Compared to the manufacturer-contractor type of air conditioning business, the European refrigeration industry looks like it is more concentrated.

During the last few years there has been a great evolution of techniques applied in refrigeration installations.

Refrigerants such as Refrigerant-12, 22, 11, and 114 are used more and more. The development of automatic controls also is increasing rapidly.

The semi-hermetic refrigeration compressor came to Europe only recently, and only for small capacities. It is certain that this compressor, designed for 50 cycles, will be the next milestone in European refrigeration development.

Centrifugal compressors, on the contrary, already are being built in Europe, although their field of application is limited.

It is symptomatic to note that many refrigeration equipment manufacturers are concluding agreements with American companies for technical assistance.

These are the comments which I would like to pass on to you. I have tried to give you some conclusions after a thorough study of the European market and its daily confrontation with American suppliers.

I am convinced that even if the development of air conditioning in Europe will not be as important as it is in America, the air conditioning industry has a great future ahead of it here, and that it will build a new Europe with engineered climate.

NEW ZEALAND

Highly Advanced Agricultural Country Now Looking Around For New Industries To Employ Growing Labor Force

WELLINGTON, N. Z.—New Zealand is looking around for new industries.

For many years this idyllic land of the Antipodes has been an agricultural country—relying chiefly on exports of bovine products to provide jobs and maintain its comfortably lower-middle-class economy.

Nowadays, however, New Zealand is bashed by a startling rise in population which threatens to flood its labor market in the next decade. Estimates from NEWS subscribers reveal that New Zealand may have 3,000,000 inhabitants by 1970. Exports of bacon and butter alone won't support them.

Already there is an overload of workers in industries which rely on the cows and the fish for their livelihood.

Imigrants from England

Much of this increase in population is the result of immigration, especially from England. Regardless of where the labor force comes from, however, it must be put to work; because New Zealand does not have reserves to support the idle.

While industry was not completely unknown in New Zealand before World War II, many years of trade and capital restrictions during and following the war prevented a rapid industrial growth which could have accommodated the increasing labor force.

In 1956, however, the completion of the Roxburgh electricity generation station gave new hope to those who realized that industrialization was the only solution to New Zealand's unemployment problem.

Low Cost Electric Power Available

Low-cost electrical power, based on flowing streams and free thermal steam (which wells up like springs from the ground here) now can underpin the needed industrialization.

Latest promising development in this beautiful island country is a $280,000,000 aluminum facility located in the southland lakes district.

Problem of industrialization which New Zealand faces is quite different from that which is found in underdeveloped nations.

Fishing and farming do not provide jobs in sufficient number to absorb the growing labor force, as has been noted. Nevertheless, this is a highly advanced country in terms of education, personal income, and political stability.

Therefore the government is making every effort to shift New Zealand's industry from the growing and processing of agricultural products to the manufacture of exportable goods.

The economic base for doing this is present, new talents and skills are arriving by the boatload every week, and the future is optimistic.

ENGLAND "Fine Fare", London

BERMUDA "Outerbridge", Shelley Bay

AUSTRALIA "DGM" installation, Sydney

Anywhere in the world you find McCray you'll find

DEPENDABILITY

McCray merchandisers have the designs that increase food sales in markets wherever they are used. And, just as important, they are built to protect the profit they earn. They do this by dependable refrigeration systems—developed and refined through 70 years of experience including field-testing, engineering and continually refined manufacturing methods and equipment.

No short cuts are taken that could impair performance. Compressors, fittings, controls and case construction are all recognized as standards of dependability and ease of service.

This Dependability pleases customers and protects profits for McCray distributors. Franchises are available in certain areas to qualified distributors. We invite your inquiry.

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Factory: Kendallville, Indiana, U. S. A.

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Jean Neuhaus, S. A., 18, Rue Charles Laffitte, Neuilly—S/Seine, France
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ADDITIONAL LICENSEE OPPORTUNITIES. Licensing arrangements for the manufacture of world-famous McCray refrigeration equipment are available to qualified organizations in several areas with high sales potentials. Write to—

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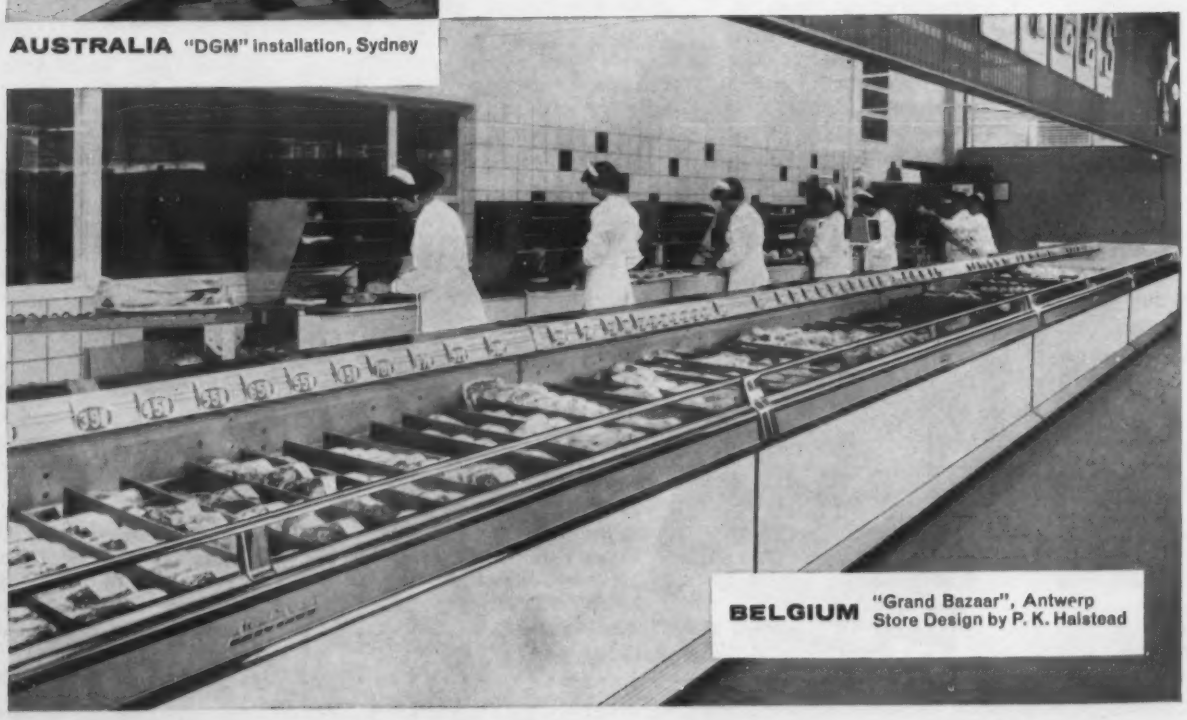

BELGIUM "Grand Bazaar", Antwerp
Store Design by P. K. Halstead

Fish Shop In the Image of Fishing Boat Completely Refrigerated

PERTH, Australia — S. C. Kingston, general manager of Musgrove's Ltd. here, recently constructed what may be the most unusual commercial refrigeration installation in the world.

He has erected a totally refrigerated fish shop in the shape of a fishing boat.

Cold-plate refrigeration begins in the bow and extends down each side. On the starboard there's an open-top freezer and a 40 degree storage compartment for fresh fish.

Included: an ice cream freezer, bottle storage compartment, and freezer room capable of holding four tons of frozen fish at five degrees above zero.

Additionally, this unique store boasts a fish fryer, shelves for chips, and a funnel section wherein is stationed the cash register and cigarette counter.

Sealed units power all the refrigeration equipment.

Mr. Kingston feels bitter about one thing, however. There's a 12% sales tax on commercial refrigeration equipment. This fact limits the business expansion his imagination deserves.

(Move over, Mr. Kingston. Taxes are the bane of businessmen everywhere.)

V O L

93

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V. I. P. TREATMENT ALL THE WAY. Starting the minute we receive a compressor or condensing unit order, we make it our business to give each customer the finest possible service all the way—including on-time delivery. Want proof that this V.I.P. treatment goes with every order? Ask our users! For proof of advantages you get in a Bendix-Westinghouse compressor specially tailored for the export market, please turn the page.

Bendix-Westinghouse **MOTOR COMPRESSORS**

NEW . . . FOR THE EXPORT WINDOW AIR CONDITIONER MARKET! A 50-CYCLE BENDIX-WESTINGHOUSE COMPRESSOR!

If you sell window air conditioners overseas, you know that a standard 60-cycle unit plugged into a 50-cycle circuit loses considerable capacity. To overcome that drawback, we now offer you a true 50-cycle compressor for the export market.

This 1-h.p., 2-pole unit (model YCH153VA-8) is designed to supply a full 7,100 BTU's on 50-cycle operation. It also offers you all the regular features of Bendix-Westinghouse compressors for room coolers. These include: permanent bolt-down mounting; rugged, dependable valve construction; latest, best type motor insulation; and more easily serviced tubing connections and terminal box.

Our complete line contains models ranging from 6,100 to 15,000 BTU's. Besides permitting you wide design latitude, these models feature a quiet operation that makes them ideal for bedroom-window units. Write for full details today.

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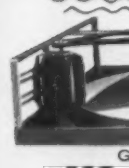
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LATIN AMERICA

Cost of Doing Business Rising and Selling Is Becoming More Personal Endeavor, Commercial Fixture Firm Finds

By Frank J. Versagi

NEW ORLEANS — The cost of doing business has gone up . . . Selling is a more personal endeavor . . . it is impossible to predict volume accurately.

These are the findings and opinions of Louis Perez, Latin American Div., Tyler Refrigeration International, C. A., which maintains offices in Caracas, Venezuela.

Pointing out that a trip through Latin America must be at least several weeks long to be logistically efficient, Perez noted that the average monthly cost of such a trip has increased fourfold in the last several years.

"Hotel rates are higher, living expenses are rising continually as more places build modern accommodations and feel they must charge like Miami Beach in season."

Within reason, Perez feels, the longer the trip, the better. He recalls a year when it was necessary to spend a total of nine months away from home.

As an example of personal selling, Perez recounted the sale of a Tyler "Air-Skreen" in Costa Rica. (The Air-Skreen is a combination display case and cooler.) Striking up a conversation with a small market owner, Perez learned that the owner was unhappy with the volume of beer he was moving. The beer was in old reach-in cabinets and it was difficult for the customers to see what was available, as well as difficult for the owner to keep the reach-ins stocked.

On the spot, Perez convinced the owner that he should try one of the Air-Skreens. Perez showed him where the unit would fit into the store and which walls would be altered. The owner was enthusiastic.

Later that night Perez received a call from the market owner. "The deal is off," he said. "The building owner, when I told him about it refuses to have the walls altered. Besides, the back end of the cooler will butt into another establishment."

Undaunted, Perez got the market owner to take him to the home of the building owner.

The landlord was sleeping, but Perez insisted on waking him, took him back to the store, and explained the advantages to him of having the first installation of this modern equipment in his building.

Perez got the store owner and building owner to sign an agreement whereby the store owner agreed to put the walls back in their original shape should he decide to move.

The Air-Skreen went in.

Breaking-in pains were eased by Perez's personal supervision and advice; adjustments and alterations were made to the refrigeration system to make it work at top efficiency in the high humidity of Costa Rica and in a location where it was difficult to get adequate ventilation for the condensing unit.

"Unlike the case in domestic marketing and sales predictions," Perez opined to the NEWS, "several factors make it impossible to predict volume of business in Latin America. A major factor is the political situation in each country.

"At times, it becomes necessary, from the Latin country's viewpoint to stop importation or to reduce it drastically.

"Further, a few countries now have their first domestic producers of certain commercial refrigeration fixtures, and we can expect more of these."

Sales, therefore, take unpredictable rises and dips in Latin America.

"Most sales of commercial refrigeration are to small stores. There are a few supermarkets, but they are far from common. After all, many of these people can't afford to buy a dozen eggs, say; they come to the store for one egg; they don't purchase milk by the gallon, but by the pint."

Perez feels that much of the published encouragement to get American industry into world trade leaves the impression that doing business overseas is easy. "It's not easy," he insists, "but it's a challenge." He pointed out that the parent Tyler company always has been international-minded.

Engineering Texts, Journals Needed In Under-Developed Areas

NEW YORK CITY—The great importance of old engineering journals and textbooks to students in technically under-developed countries was noted at a meeting here of the American Institute of Consulting Engineers by the vice chairman of the Engineers' People-to-People Committee.

Robert B. Lea, after returning from a trip to the Balkans and Middle East, observed that files there of technical journals, old as well as recent, had "tremendous impact." He declared that English "is now the technical language of the world."

He noted that even the Russians found it convenient to distribute technical material in English in the Middle East.

HOTTEST SELLER
in the home-cooling line!

GET RICH
WINDMAKER
ATTIC FAN WITH ALUMATTIC SHUTTER

- Top CFM ratings, size for size
- Rubber-mounted motor, bearings, chassis
- Quiet, efficient operation
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- Gray hammertone, red enamel blades
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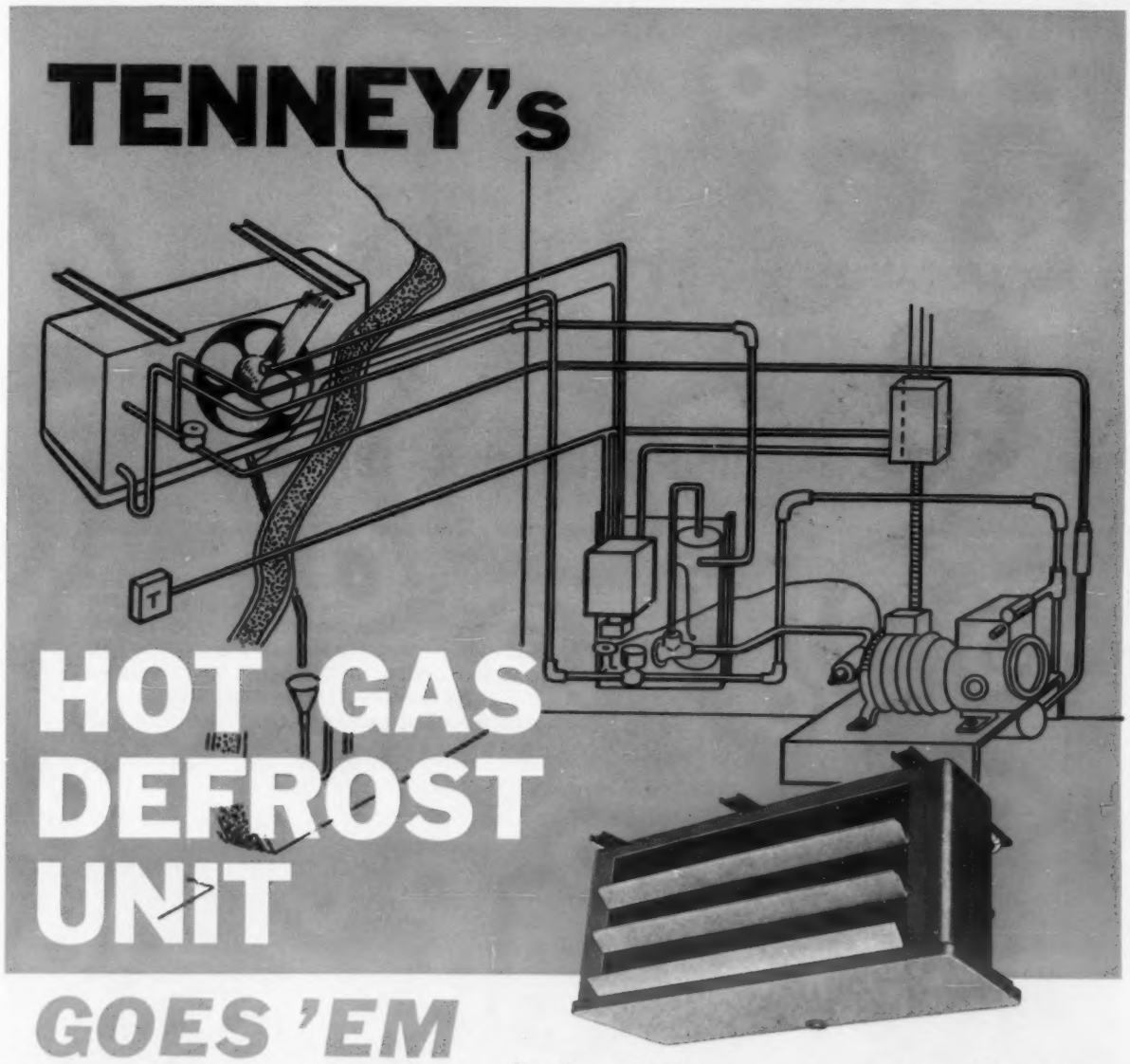

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GOES 'EM ONE BETTER!

No other unit offers as many important operating features as you'll find in Tenney's PDX hot gas defrost line! Tenney's conscientious engineering staff didn't settle for acceptable operation. They searched and tested and scrutinized for years until they developed a unit with all this:

- Generous separator-accumulator to provide centrifugal separation of liquid.
- Aspirated liquid bleed line which functions only when compressor is running.
- Crank-case pressure regulator to prevent compressor overload.
- Full time protection against flooding by means of thermostatic hot gas bypass valve.

The entire hot gas defrost unit is completely finished. No new techniques to master, no new instructions to study. And Tenney's PDX line is priced to be highly competitive. Write today for complete details!

Refrigeration, Heating & Air Conditioning Products Division
Tenney ENGINEERING, INC.
1090 SPRINGFIELD ROAD • UNION, NEW JERSEY

Outside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

(Continued from Page 1)

time haranguing television audiences . . . Sukarno and Nassar dedicating their lives to being photographed . . . Nehru and DeGaulle calculating every move with the goal of becoming Saints . . .

Never in history was Shakespeare more right ("all the world's a stage") than now. All this publicity posturing makes "good copy" for the newspapers, but it has little to do with the world's work.

Take the Congo. All we read about is strife, violence, confusion, and hopelessness over there. What's the true story? Business as usual.

The three *real* powers in Africa are Unilever, the DeBeers syndicate, and the Societie Meuniere.

Recently we've talked with representatives from Unilever and DeBeers. They buy nearly all of Africa's products, and supply nearly all Africans with their imported needs and necessities.

"What?" we asked, "has the Congo Crisis, and the formation of new nations in Africa, done to your business?

Unanimously their answers were:

"Nothing. They need us, and we are still in charge."

Uncle Sam Holds the Hole Cards

You get the same answer from anyone who is engaged in international commerce. The plain facts are:

1. The U. S. A. represents "heaven on Earth" to the rest of the world.

2. Our products, and our mode of living, are immensely desired by all nations—including Russia.

3. Quietly and competently American corporations are aiding and abetting this trend. And profiting thereby.

4. Nobody else but Americans shiver at the thought of a World War III possibility. Elsewhere sophisticated citizens agree that the Communists are operating a gigantic bluff.

5. Posturing politicians on the world scene have scant relation to reality, nor do newspaper headlines anywhere mirror ordinary life. Judging from the latter, an outer-space visitor might conclude that all Earthians are murderers, arsonists, burglars, rapists, blond divorcees, and juvenile delinquents.

In sum: international commerce is expanding rapidly, it is geared to American living standards and products, and there's a great future ahead for our children.

You Won't Believe This

Beer no longer is Germany's favorite beverage.

In 1960, consumption of milk by West Germans (the only ones who count in our strategy) was 31 gallons per capita.

Beer consumption per gullet: 20.1 gallons. Moreover, sales of canned fruit juices, Coca Cola and the like, have tripled in the last decade.

Big California Out-Biggied

Western air conditioning manufacturer Drayer-Hanson readily admits it does not sell the biggest amount of air conditioning equipment overseas.

But it does claim to sell the "biggest name." Like, man "Technische Handelsondernemning"—all 29 letters of it!

Drayer's international distributing organization, Climate Control International, recently contracted for a year-round cooling installation in a plush new restaurant at a Dutch sea resort, Scheveninven (near Rotterdam) in cahoots with Handelsonderneming, er, what's that again?

Shall We Trade Big Ones For Little Ones?

Dr. William Van Goethem of France has suggested that it would be mutually beneficial if European Common Market countries relied upon America for larger, more luxurious refrigerated products, while America imported "compact" models from the ECM.

It's an interesting idea.

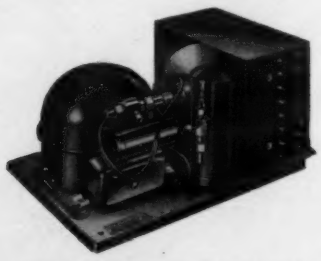
He contends that the American market for tiny refrigerators and such—which account for the bulk of the European market—is too small to warrant production lines in American plants.

At the same time the market in Europe for large refrigerators and room air conditioners—typically American—does not justify their mass production on the continent.

It would be mutually advantageous if we dovetailed our commercial and technical facilities, he believes, for more economical market penetration and saturation on both sides of the Atlantic.

Obviously the American industry can't afford to ignore the leaping-forward European Common Market of 165 million prosperous customers.

Even so, this tremendous consumer area won't buy American



High torque compact, T model condensing units for 1/3 and 1/4 hp applications.

New small AE compressors for refrigerators and freezers from 1/12 —1/6 hp.

Pancake type room cooler compressors with capacities from 6000 btu —14,500 btu.

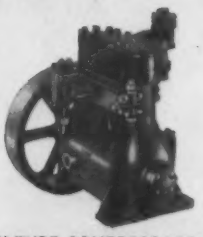
more than just "refrigeration"...

When you specify Tecumseh compressors or condensing units you get—engineering experience that has given the industry more product "firsts"—assurance that your air conditioning or refrigeration system has components most closely designed to your specific application—operating efficiency proven in over forty two million installations—and the faster service that comes from direct sales agents located convenient to you around the world. May we put a Tecumseh man in touch with you?

A full line of hermetic commercial condensing units from 1/8—5 hp.

Larger air conditioning and heat pump external mount compressors from 1 —2 hp.

Year-around air conditioning and heat pump compressors ranging from 3 thru 5 hp.



OPEN-TYPE COMPRESSORS
Conventional models from 1/6 thru 20 hp.

OPEN-TYPE CONDENSING UNITS
Both self-contained units from 1/4— 1 hp. and remote-type units from 1/2 thru 20 hp.

forty two million compressors in world-wide service

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Tecumseh PRODUCTS COMPANY
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TECUMSEH, MICHIGAN, USA

AIRSERCO HERMETIC COMPRESSOR OPENER*

OPENS BIGGER PROFITS FOR YOU!
Automatically opens any hermetic compressor ROUND-OVAL-IRREGULAR regardless of the position of the weld.
SAVES LABOR! CUTS COST! INCREASES PROFITS!
* Made by Frankell Mfg. Co. for Airserco.
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products in volume unless they are adapted to European's needs and customer desires.

"The U. S. A. is a country of wide areas, expansive homes, big cars, big refrigerators and big salaries," he observes, "while Europe has narrow streets, small apartments, tiny cars, midget appliances, and white-collar salaries one-half to one-third those in the United States."

Last year the six nations which comprise the European Common Market produced four million refrigerators, three million washing machines, and three million space heaters.

Such sales volumes are not far from American output. However, the great majority of these products were half as big, half as luxurious, half as expensive as the U. S. A. variety.

"Nevertheless there is still a demand for the large and luxurious American items among more affluent European families," states Dr. Van Goethem.

"The European Common Market now has entered and possessed the European mind emotionally as well as economically. It is an irrevocable movement of uniting peoples whose buying capacity is increasing at least by five per cent annually."

Interesting suggestion, this tit-for-tat trade proposal. Obviously it has merit for all concerned.

Add Newspaper Boners

The daughter of a well-to-do square married Queen Elizabeth's first cousin.—*St. Petersburg Independent.*

Before that, he was so close to the Suez crisis that he was interred for a month by the Egyptians. — *Rochester Democrat & Chronicle.*

Stories of the Week

Conversation behind the Iron Curtain:

"I'd like the evening off, Madame Director, to go to the opera," pled a factory worker.

"Madame Director!" roared the bosswoman. "How dare you address me like that? You will call me Comrade Director. Er, what opera do you want to see?"

The reply, shyly: "Comrade Butterfly."

Many credible witnesses testified that a ghost appeared at a certain spot at a certain time every night on an English moor.

Newspaper photographer was assigned to cover. Sure enough, the ghost showed up. Hastily the photog (who had been skeptical, like all newspaper picture flickers) assembled his equipment and took a shot of an apparition which obviously was posing for him.

Thereupon the spook faded away.

In the dark room the film was developed. Nothing. Blank. The photog checked his equipment, and discovered that he'd inserted an inadequate flash bulb.

The spirit was willing, you see, but the flash was weak.

From Australia, which is devoted to horses even more than are England's royalty and America's television westerns, comes a classic tale.

Horse named Concose bumpedy-bumped in a truck trailer toward a racetrack. On a rocky bend in the road, the trailer (and its contained equine) rolled over a cliff.

The trailer was wrecked. Concose, sturdy Australian, emerged unscathed. First miracle.

Second miracle: Concose, 8 to 1, won by three lengths, going away, next day.

In the "pidgin English" of Australian aborigines, the second verse of the twenty-third Psalm is translated:

"Big Name makum camp alonga grass, takum blackfella walkabout longa, no frighten no more hurry watta."

Quotes of the Week

We are an emotional, impatient people with a taste for quick results, a tendency toward extreme disappointment when these are not obtained, and a habit of wishful thinking.—C. L. SULZBERGER, *N. Y. Times.*

The seven most common mistakes in life are: Believing that individual advancement is made by climbing over others. Worrying about things that can't be changed or corrected. Insisting that a thing is impossible because we ourselves can't do it. Refusing to ignore trivialities so that important things may be accomplished. Neglecting development of the mind. Attempting to compel other persons to believe and live as we do. Failing to establish the habit of saving.—RICHARD LA FOND.

Selling is like picking apples. It's easy to stand on the ground and strip the low branches, and we say that business conditions are good. But, when we have to climb the tree to get those apples at the top, that's work. Thereupon we think that business conditions are beginning to get bad.— P. K. SIDELINER.

Even in the face of today's rising prices, music remains an uncomplicated luxury for the entire family. It is a child's rightful heritage within reach of almost everyone. I don't believe a home can be happy without some evidence of music.—ANDRE KOSTELANETZ.

NOW!
A SAFE NEW LIQUID SCALE REMOVER

A safe, high density, super concentrated, non-toxic acid formulation. Contains no hydrochloric or other fuming acids and can be safely used on aluminum, brass, copper or steel. No neutralizer needed. Safe to drain on shrubs or plant life when properly diluted. Quickly removes hard water scale, algae, organic and inorganic materials. Goes to work immediately . . . saves time . . . Economical. Combines the advantages of both dry and liquid cleaners. One gallon dissolves about 5 lbs. calcium carbonate scale, or 1½ times more scale per gallon than hydrochloric or muriatic acid cleaners.
Super Concentrate is a general purpose, heavy duty, scale remover in unbreakable plastic jugs.
ASK YOUR DEALER FOR VAPCO SUPER CONCENTRATE and other fine Vapco products TODAY!

The GARMAN Company
VAPCO® QUALITY PRODUCTS
ST. LOUIS 25, MISSOURI

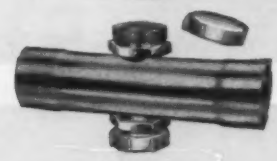
HENRY VALVE CO.
CONTROLLING FLOW
SINCE 1914

DEMAND IS GREAT... EVERYONE IS BUYING THESE EXTRA VALUE PRODUCTS

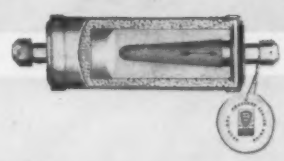
"DRI-VUE" Moisture-Liquid Indicators | "DRI-COR" Filter-Driers Molded Core | "GOLDEN BANTAM" Diaphragm Packless Valves

"DRI-VUE" INDICATOR PORT
Actually Spells "WET" or "DRY" with element Color Variation—Largest Visible Element Area.

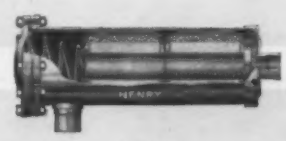
"DRI-VUE" INDICATORS
Double Port Moisture-Liquid Indicators, Large O.D.S. Sizes. Triple Sealed Ports.



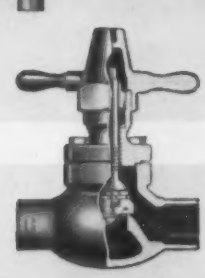
"DRI-COR" FILTER-DRIERS
Two Stage Drying; Molded Core and Granular Desiccant. Abso-dry Processed.



"DRI-COR" Cartridge DRIERS
Molded Filter Core and Granular Desiccant. Split Second Cartridge Installation.



SHUT-OFF VALVES
Packless and Packed with Flanged and Integral Connections. Wide Range of Sizes and Types.



Only Henry offers you this complete variety of types and sizes, from ¼" flare packless to 4⅛" O.D.S. packed Wing Cap valves, from 1 ton sealed type to 165 ton cartridge type filter-driers and ¼" flare single port to 2⅛" O.D.S. double port moisture indicators.

HENRY VALVE COMPANY
For Refrigeration, Air Conditioning and Industrial Applications
MELROSE PARK, ILLINOIS, U.S.A. CABLE: HEVALCO, MELROSE PARK, ILL.

TECH CENTER

by
FRANK J. VERSAGI

Are Conditioners Corrosion Resistant?

How are today's room units and outdoor condensing units standing up under the diverse environments in which they must operate? Is it necessary that manufacturers produce *specials* for application in sea coast areas? Is there an accepted level of corrosion resistance which all manufacturers are meeting?

The answers to these questions are:

"So-so" — "Probably" — and "Apparently not."

The *so-so* evaluation of today's equipment reflects the continuing complaints of unit failures or obsolescence due to corrosion. Out of Pompano Beach, Fla., comes a case history of air conditioners and heat pumps which have required fan motor replacements averaging one per unit per year and the complete replacement of a significant percentage of complete cycles. Through-the-wall sleeves are deteriorating so badly that, in one installation, it looks as though all the sleeves will have to be replaced before the end of the fifth year following installation.

From Mexico comes word that aluminum fins are disintegrating completely, especially near the Pacific coast. This is on the evaporator, not the condenser.

On Guam, aluminum corrosion is attributed to the lens effect of the sun's shining through water. Apparently, after a rain, the sun, shining through droplets of water, creates local hot spots and starts serious corrosion on aluminum. Guam has also had trouble with fan motor shafts rusting out and seizing or actually falling apart.

Probably. It will probably remain necessary for some *specials* to be manufactured for especially aggressive environments. A couple of companies offer special construction for seashore duty or *double life* duty in areas heavy with industrial fumes. Where the manufacturers provisions aren't adequate, the local dealers or contractors take action. On Guam, for example, one approach to solving the aluminum corrosion problem was to go to all-copper coils with a solder bond. "This works fine, but it's too expensive," is the evaluation.

The alternative to making specials for such areas would be to make all units sufficiently corrosion-resistant to withstand seashore or aggressive industrial environments. Unfortunately, this is not yet being done as a general thing, so the complaints continue to come in of fins falling away, compressor shells rusting through from the outside, wire mounts failing, louver edges discoloring and ruining facades.

Which brings us to the third answer: *Apparently not.*

A quasi-formal survey of some 18 room unit manufacturers indicates there is a 10 to 1 difference in the corrosion resistance of their products. Salt-spray results, never considered the most reproducible of tests, vary from 200 hours to over 1,000 hours at 5%. No real standard applies to corrosion resistance of the assembled units.

This is not to say that the problems of corrosion are not being studied. They are, but there is no organized investigation, no exchange of data which could contribute to a common pool of knowledge. Instead, each producer is taking this-or-that approach to providing better products. Some of these approaches:

- glass fiber cases and sleeves
- leaving the aluminum fins off the last row of condenser tubes
- painting aluminum fins and louvers
- better metal treatment of compressor shells and fan motor shafts
- chrome-plated screws to prevent staining
- aluminum nuts and bolts
- development of less corrosive fungicides
- development of better corrosion-testing methods.

NO STARTING PROBLEMS
with
WAGNER CAPACITOR-START MOTORS

Pack more power into less space...give long troublefree service...are easy to hook up

Here are general purpose single-phase motors that have high starting torque and high pull-in torque. When used in the proper application and supplied with voltage close to their rating, they'll give positive starts every time. Troublefree operation is assured... thanks to the positive action of the Wagner governor mechanism and long life quick-break switch.

Wagner Type RK Motors pack more power into less space. Small enough to fit in tight spots, their ruggedness is built-in... permits direct mounting. They are available in a range from ¼ through 5 horsepower, with sleeve or ball bearings, and with rigid bases or resilient mountings. And, sleeve bearing fhp models can be operated in any position.

Get these motors from leading distributors in your city, or from Wagner Sales Offices in 32 cities across the country. Your Wagner Sales Engineer will be glad to help you select the right motor for your application. Wagner Bulletin MU-217 gives full details on Capacitor-Start Motors.

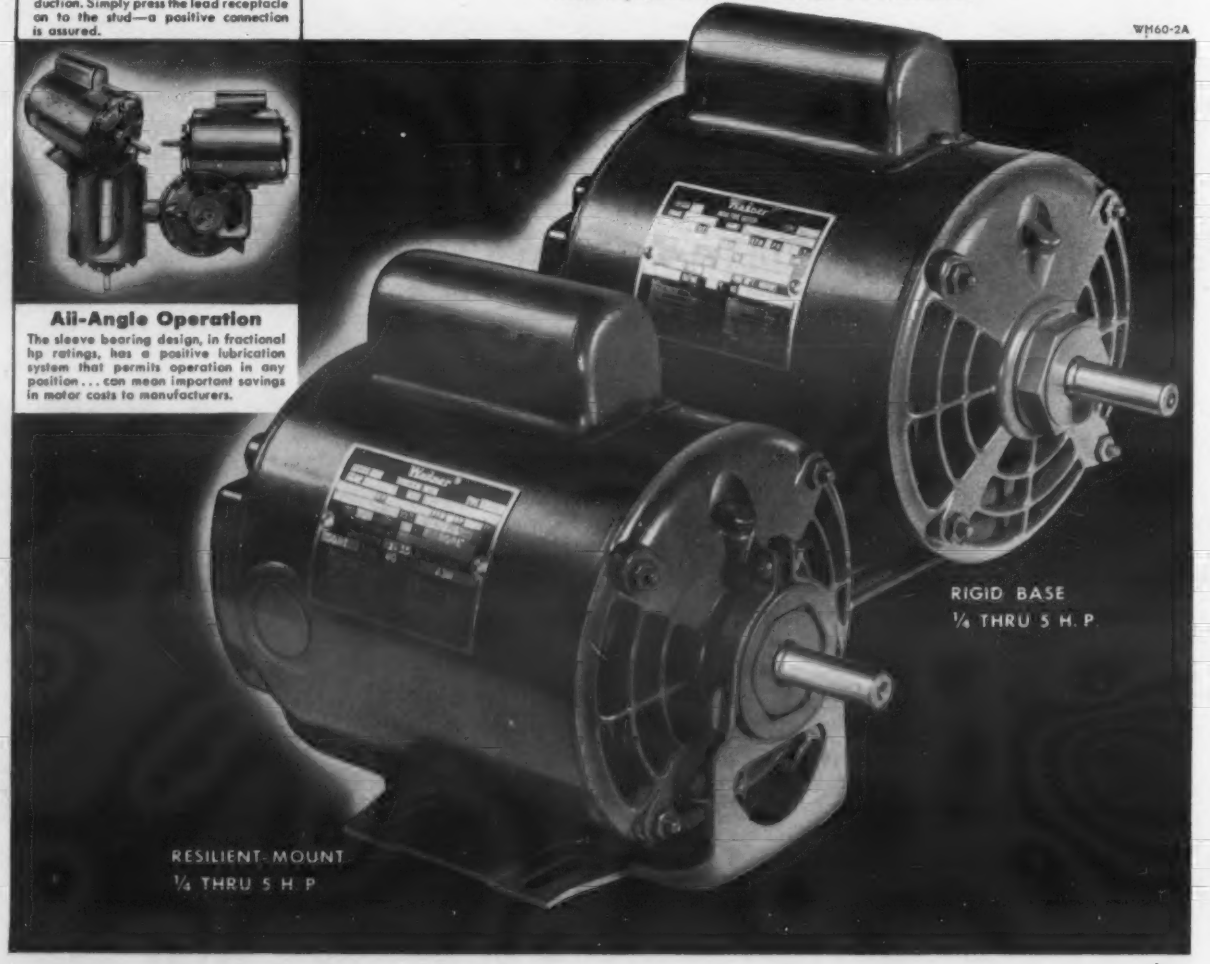
Quick Break Switch
The starting winding is disconnected from the line by this Wagner designed switch... test proved to make more than a million breaks. (That adds up to two starts per hour for 50 years!)

Quick Connect Terminals
Brass tabs on terminal studs permit quick, easy connection of leads... cut wiring time to speed assembly line production. Simply press the lead receptacle on to the stud—a positive connection is assured.

All-Angle Operation
The sleeve bearing design, in fractional hp ratings, has a positive lubrication system that permits operation in any position... can mean important savings in motor costs to manufacturers.

Wagner Electric Corporation
6441 Plymouth Avenue, St. Louis 33, Missouri

WM60-2A



Refrigerating Specialties Elects Hansen President

CHICAGO — Refrigerating Specialties Co. here has announced the election of Charles C. Hansen III as president.

C. Hansen, III

Hansen has been chief engineer of the company for the past eight years. He previously held refrigeration engineering positions with Burge Ice Machine Co., Betz Corp., and Liquid Carbonic Corp.

Hansen stated that no immediate policy changes will occur, but that steps are being taken to further improve the company's engineering and production facilities and personnel. Several new refrigerant control valves which are under development will be introduced during the coming year.

Flexible Tubing Has New Trade-Mark

GUILFORD, Conn.—Designed in the form of an ellipse or tilted oval, new Flexible Tubing Corp. trade-mark combines the company's initials in white on a light-blue background. A dark-blue speed shaft crosses the "t" and forms the lower bar on the "f."

In addition to product labeling, the new trade-mark will appear on all promotional and other company literature, advertising, signs, and buildings.

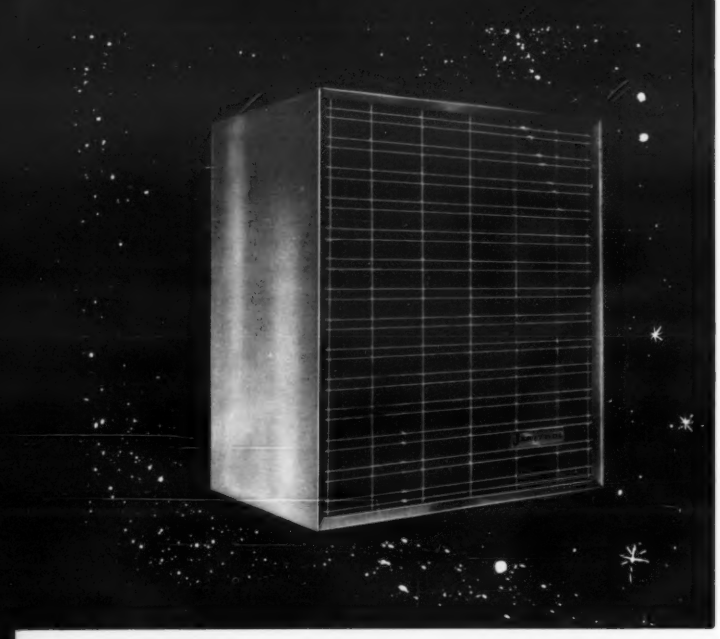
JANITROL

presents a dramatically new achievement . . .

67 SERIES

GAS-FIRED
UNIT HEATERS

UNPRECEDENTED STYLING, PERFORMANCE AND DURABILITY TO
MEET THE MODERN TREND IN ARCHITECTURAL DESIGN



provide the ultimate in quality
and economy

new JANITROL

GAS-FIRED

commercial & industrial heating equipment

ALL NEW! JANITROL 67 SERIES UNIT HEATERS FEATURING... STELLAR NEW STYLING, PERFORMANCE AND DURABILITY!

New Janitrol 67 Series Unit Heaters are unusually handsome . . . incredibly quiet and efficient. They bring you, for the first time in unit heater history, distinctive appearance you can recommend for the smartest business setting. And they offer in even greater measure the traditional Janitrol quality and dependability in heating.

Their clean, crisp "look" is a departure from the crude, cumbersome industrial appearance of yesterday. Modern machine tools, trucks and structures have evolved as attractive, functional designs. And now, Janitrol sets the pace in unit heater styling!

The draft hood opening and adjustable louvers are concealed by the beautifully styled gold-tone grille. The rear combustion air inlet permits use of a solid bottom panel . . . eliminates any possibility of obstruction to combustion air intake.

Inside, design progress is equally significant. Yet every part is proven . . . every safety feature is included. Result? Performance no other unit heater can duplicate.

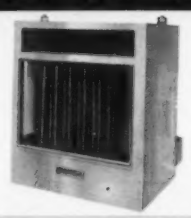
Naturally, the "heating heart" of every new Janitrol is the famous Janitrol Multi-Thermex heat exchanger with this unchallenged record for durability and low maintenance: among nearly three million heat exchanger tubes produced since 1940, replacements for all causes have run less than ¼ of 1%.

Investigate the many exclusive advantages of Janitrol 67 Series Unit Heaters for jobs you specify or install. Let them help build your reputation for quality.

FEATURES THAT MAKE ALL OTHER UNIT HEATERS OLD-FASHIONED!

New "sheer look" styling—Beautiful Phoenix Beige finish • New gold-tone grille. Conceals louvers and draft hood opening • Low overall height • Automatic controls—Fully accessible • Factory-fired • Low Voltage Gas Controls—Standard • Low Voltage Sensitive Thermostat—Standard • Limit control—interrupts control circuits and shuts off fuel if unit temperature becomes excessive • Thermopilot Shut-off. Shuts off all gas, including pilot, in event of pilot flame failure • Automatic Pilot. Exclusive Janitrol low Btu. non-linting design • Quiet air delivery. Acceptable for schools and other applications where conventional units are too noisy • Motor prelubricated for 5 years • Built-in Draft Hood. Removable, provides full access to heat exchanger. Protects burners from abnormal up or down draft • Combustion air inlet. At bottom rear, through control enclosure. Controls constantly cooled by combustion air stream. Eliminates cross draft on burners • Ampli-Fire Ribbon Flame Burners. No flame contact on metal. Removable, with non-linting air shutters featuring thumb-screw adjustment. Eleven models from 30,000 to 250,000 Btu/hr.

MEET EVERY COMMERCIAL AND INDUSTRIAL HEATING NEED FROM JANITROL'S BROAD LINE



GAS-FIRED DUCT-FURNACES
Install in a duct where air is circulated by separate blower. Adaptable for use with cooling. Two sizes: 200,000 and 300,000 Btu/hr. input—may be combined to provide capacity from 200,000 Btu/hr. up, in increments of 100,000 Btu/hr. input. Six sizes, from 50,000 to 225,000 Btu/hr. in Duct 55 models.

BLOWER-TYPE UNIT HEATER
Allows air delivery from greater heights and against greater static pressures. Models with exposed or enclosed blowers. A.G.A. approved as low and high static-type blower unit heater for air delivery to duct system up to 1.0 in. W.C. external static. Heat sections factory assembled. Sizes: 300,000, 400,000 and 500,000 Btu/hr. input.

FLOOR-TYPE UNIT HEATER
Cold air drawn from floor level is heated, filtered and discharged horizontally overhead. Quiet, clean, carefree—ideal for offices, restaurants, stores, labs, etc., requiring a compact unit.

HEAVY DUTY BLOWER HEATERS
For unit heating, central heating and air conditioning. Wide range of standard blowers and motors assures correct air delivery and temperature rise in each application. Factory assembled and tested. Capacities from 250,000 Btu to 1,750,000 Btu/hr. input.

HORIZONTAL OIL UNIT HEATER
For suspension overhead. Saves floor space. Compact, efficient, low-maintenance design clean and quiet in operation. May also be used to feed duct system. Choice of sizes from 84,000 to 250,000 Btu/hr. output to meet all needs.

helpful data for
ARCHITECTS, CONTRACTORS AND ENGINEERS
write today for complete information on Janitrol units for heating with clean, economical gas in buildings of every type. There's no obligation.

JANITROL MFR
HEATING AND AIR CONDITIONING
A Division of Midland-Ross Corporation
Columbus 16, Ohio • In Canada: Moffats Ltd., Toronto 15

Also Makers of Surface Industrial Furnaces, Kathabar Humidity Conditioning, Janitrol Residential Heating and Cooling Equipment.

Began Overseas Production In 1954

Controls Co. of America Finds World Trade Attractive, But Not Without Problems

CHICAGO—From Sao Paulo to Paris to London, the peoples of the free world are increasing their incomes and are spending newly acquired cruzeiros, francs, and pounds sterling for a wide range of modern-day consumer items as part of a dramatically continuing rise in world-wide standards of living.

Early to recognize this trend and its growing market potential, a Midwestern pioneer manufacturer of control systems has been exporting its engineering and production know-how in order to supply this rising demand abroad.

Controls Company of America, of Schiller Park, Ill. (a suburb of Chicago), launched its overseas manufacturing operations in 1954. Today, its international headquarters company (Controls A. G., in Zug, Switzerland) is the European nerve center which directs over-all marketing activities and coordinates the manufacturing of the company's plants on the Continent.

Leads In Europe

It leads all European firms in the manufacture of vaporizing oil heating controls for space heaters.

Controls Maatschappij Europa N. V., located in Nijmegen, Holland, has expanded its plant and now has a 70,000 sq ft installation. Its 400 employees produce a wide variety of controls for the refrigeration, air conditioning, oil and gas heating industries.

A second subsidiary selling in the Common Market area has begun operations in a newly-constructed 32,000 sq ft plant in Schirmeck, France, near Paris. It is now manufacturing controls for the growing French market.

In addition, a separate sales and service company has been organized recently with headquarters in Duisburg, Germany.

Controls Company of America (U. K.), Ltd., which put into operation a plant near London last January, serves the "Outer Seven" market.

In the Dominion of Canada, two plants are operated by Controls Company Canada, Ltd., a wholly-owned subsidiary of Controls Company of America. Its Redmond Motor plant in St. Thomas, Ont., assembles fractional horsepower motors, and another manufacturing facility at Cooksville, Ont., assembles refrigeration and appliance controls.

South American Activities

In South America, Controls A. G. owns 50% interest in a 40,000-sq ft Sao Paulo, Brazil, plant and a controlling interest in another company in Buenos Aires, Argentina. Both companies concentrate their manufacture on controls primarily for the home laundry industry.

Controls Company regularly sends its key American engineers abroad, and brings their European counterparts to this country for extended periods of study, training, and observation.

This continuing exchange of personnel makes possible better understanding of special requirements overseas, and also insures a flow of fresh thinking and new ideas.

Although the market is attractive, a controls manufacturer doing business overseas has its share of problems. European customs and practices are quite different from those in the U.S.A., and Controls Company engineers have had to modify and even redesign their products accordingly.

To meet unusual marketing requirements overseas, this firm's engineers have had to exercise considerable flexibility in working with their counterparts in manufacturing plants abroad to solve some of the problems they encounter.

Tooling and design specifications worked out for U. S. weights and measures are incompatible with European standards of grams and millimeters, for example.

Also the substitution of different metal alloys sometimes poses a threat to the high reliability standards for controls components until laboratory certifications can be secured.

Furthermore, each country has its own version of the U. S. Underwriters' Laboratories. A control device meeting performance specifications in Germany might not be suitable in Italy, and Holland might have still another code.

These are typical European production and marketing problems. Because Controls Company's management and technical staffs overseas are made up of skilled nationals accustomed to the European way of doing business, proper solutions and adaptations are part of the job and are taken in stride.

Gas Industry Plans $350,000 Structure For World's Fair

SEATTLE — Visitors to the Century 21 Exposition in Seattle will get a look into the future at the gas industry's exhibit, which is to be one of the largest at the 1962 World's Fair, it was reported.

The gas industry is planning a $350,000 structure in the domestic commerce and industry section of the exposition, according to William P. Woods, president of Century 21 Gas Exhibit, Inc., and of Washington Natural Gas Co. located in Seattle.

Woods said the exhibit will feature displays that will show present and future uses of gas. Equipment and appliances now available and those in research stages will also be exhibited.

The Seattle exposition, which will be held April 21 to Oct. 21, 1962, will be devoted to recent and potential advances of civilization and will permit visitors to "step into the next century."

Congress has appropriated $9 million for the U. S. government exhibit, the largest amount it ever provided for a domestic world's fair.

DO YOU REMEMBER THAT SEPTEMBER AFTERNOON?

The hottest day of the year! And the air-conditioning conked out. The office was sweltering — tempers short — nothing accomplished — might as well have gone home. Sure, I knew that the cooling water should be chemically treated but the air-conditioning system had been working beautifully, and I just kept putting it off — then that extra 10 degrees of heat was just too much. The repair bill was bad enough but the two days it took to repair the system was unbearable.

DON'T LET IT HAPPEN TO YOU!

CHEMICATOR automatically prevents scale and corrosion, kills algae and fungus in your cooling tower or evaporative condenser in units of 5 to 300 tons.

CHEMICATOR is simple in design — inexpensive to install and operate — ready to perform a life-time of trouble free service.

**Distributed locally in many areas.*

Write for 12-page illustrated brochure.

Chemicator

CHEMICATOR DIVISION - ERLEN PRODUCTS CO.

700 SO. FLOWER STREET, BURBANK, CALIFORNIA

Buffalo Forge Seeks License Agreements In Italy, India

BUFFALO — Buffalo Forge Co. is seeking to develop foreign markets through license agreements with manufacturers in Italy and India, according to William R. Heath, president.

Heath revealed his company has signed a license agreement with Ercole Marelli & C. S. P. A., Milan. The Italian firm makes air conditioning and power plant equipment.

It is hoped that this agreement will develop into a substantial amount of business, particularly in the European Common Market, Heath stated.

Marelli's first project utilizing Buffalo Forge-designed equipment is the ventilation system for the 7½-mile tunnel between France and Italy.

Taylor Instrument Overseas Volume Hits 25% of Total

ROCHESTER, N. Y.—Noting the company's investments in the past few years in extending sales coverage throughout the world, Raymond E. Olson, president of Taylor Instrument Cos., declares that 25% of the firm's volume now comes from products either manufactured abroad or exported from this country.

And, he added, this proportion is growing.

Last fall, the company established an assembly subsidiary in Mexico. This is the sixth foreign country in which Taylor Instrument has a subsidiary. Three of these were established in the past three years.

Olson added that Taylor is "always exploring the possibilities of other subsidiaries abroad."

Belgian Federation of Industries Urges Speed-Up In Common Market Progress

BRUSSELS, Belgium — The Belgian Federation of Industries is advocating an acceleration of the progress of the Common Market Treaty.

A 20% reduction in internal tariffs to take effect at the end of 1961 is under consideration by the various EEC nations. In accordance with that Treaty, a 10% cut already is scheduled for Dec. 31, 1961.

The Belgian Federation of Industries supports that additional reduction, plus a lowering of the total transition period to eight years. Under the Treaty, the transition period during which EEC internal tariffs would be abolished would have included three four-year stages.

According to the Belgian Federation of Industries' proposal, the second and third transition stages should be reduced to two years each.

The Belgians also insist on speedier realization of other Treaty provisions such as: setting up a common trade policy; applying Articles 95 and 99 regarding internal and turnover taxes; making uniform the methods of computing import compensatory taxes and export rebates; abandoning any form of Government assistance incompatable with the Treaty; and realizing a mutual agricultural policy.

Belgian Gross National Product per capita amounted to $1,294 in 1959. Corresponding figure for 1960 displayed more than a 4% increase.

Other European countries had the following GNP per capita in 1959, according to OEEC statistics: Luxembourg, $1,358; Britain, $1,263; France, $1,143; West Germany, $1,120; the Netherlands, $903 and Italy, $576.

In April, 1961, Belgian exports and imports amounted to $336,180,000 and $337,440,000 respectively. Corresponding figures for 1960 exports and imports were $325,020,000 and $312,960,000.

As is the case in other European countries, the Belgian economy has become more and more dependent on foreign trade during the postwar years. This trend towards increased internationalization is evidenced by a proportionally greater rise in imports than in GNP.

The City of Antwerp recently issued a well-illustrated brochure on the City and the Port as a manufacturing and business center of Europe. Through some 300 shipping lines, Antwerp provides regular services to all parts of the world.

Its port is undergoing an extensive economic development program, and new industrial land has been created in the port area itself.

Various U. S. concerns already have manufacturing and assembly facilities and refineries in Antwerp.

Incidentally, an American and Common Market Club recently was founded in Brussels for the purpose of developing business and social relations among EEC businessmen and their American counterparts who are residing in the Common Market area, or who are interested in operating there.

Footnote: the European Economic Community headquarters, and most of its administrative services, are located in Brussels.

In India

Operating Rooms, Theaters, Testing Rooms Must Be Cooled

MADRAS, India—Recent government regulations decree that all hospital operating rooms, cinema theatres, standards and testing rooms be air conditioned, according to subscriber R. Sehsadri.

Air conditioned trains are proving immensely popular, he reports, and air conditioned busses will be put on the road soon.

Cold storage plants for fish are going up in many places. Factory air conditioning thus far is largely limited to administrative offices and jig boring rooms in this vast, emerging sub-continent.

Although compressors, controls, and valves are being imported, other components are manufactured locally in India.

Primary units assembled here include self-contained commercial and domestic package air conditioners, walk-in and reach-in commercial cases, and beverage coolers.

FIRST

completely self-contained air conditioning units

GOVERNAIR CORPORATION

. . . began the manufacture of the first completely self-contained commercial type air conditioning units in 1937. Development has been continuous since that time, and Governair now manufactures packaged air conditioning units, for both commercial and industrial application, in the widest range of capacities available in the industry.

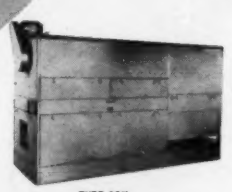
Governair Corporation also constantly recognizes the importance of producing a high quality, completely flexible system to benefit the end user best. Production facilities are tailored to accomplish these ends economically. This, in turn, makes the Governair prices highly competitive, even though only the finest components are used in the assembly.

Development of the larger tonnage units has made available the economy of installation and reliability of a factory balanced and tested package system . . . for even the largest industrial requirements. Single units of 120 ton capacity are being fabricated regularly — and to the exact specifications of the customer.

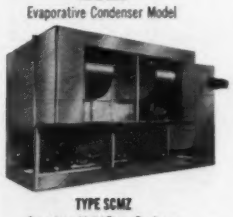
GOVERNAIR CORPORATION
4840 NORTH SEWELL
OKLAHOMA CITY, OKLAHOMA

GOVERNAIR

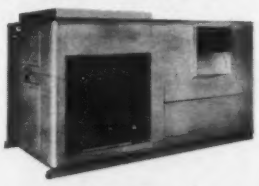
TO MANUFACTURE
TO DEVELOP



TYPE SCU
Evaporative Condenser Model



TYPE SCMZ
Complete Multi-Zone Package



TYPE SCAC
Air Cooled Condenser

TYPE ST
Water Cooled Model

TYPE STMZ
Water Cooled Multi-Zone

Write for detailed information, or consult your yellow page directory for the name of our local representative.

Australian Bowling Centers Turn To Air Conditioning with Sub-Micron Filters

ARNCLIFFE, N.S.W., Australia—The Sears Heating & Ventilating Coy. Pty. Ltd. here is playing a major role in the introduction of bowling center air conditioning in Australia, using sub-micron filtration for the positive elimination of smoke, bacteria, and odors, according to W. J. Lee, chief engineer of the Air Conditioning Div.

Lee said that close cooperation between his company and Doug. Stewart, managing director of Ten Pin Bowling Centres Pty. Ltd of Sydney, resulted in "the first installation of its kind in Australia" at the Cross Road Bowl, Adelaide (South Australia).

This bowling center, Lee pointed out, is designed on an identical distribution system as that described in an article in the May 1 issue of the NEWS. He referred to a story about the Pioneer Bowl in Norwalk, Calif., where the air distribution system circulates conditioned air through the alley approach area.

Supply Air Diffused Over Lane Approach

At the Cross Road Bowl, Lee explained, supply air "is diffused over the lane approach, with return air being taken at ceiling level over the spectator area.

"Supply air is taken to the restaurant capable of seating 80 people, to the Snack Bar and Nursery where separate reheat is employed for the control of temperature and humidity in the Nursery area.

"Refrigeration is supplied by two self-contained water-cooled units each having a capacity of 24 tons, the installation being situated above the lane approach area, in the ceiling space beneath the roof.

Primary and Secondary Filtration

"Each unit is fitted with primary and secondary filtration for recirculated air, with primary filtration of the outside air —the secondary filtration is by absolute air filters which have an efficiency of 99.95% elimination in the 0.1 to 0.05 micron range.

"Use of these filters enabled us to employ maximum recirculation, inasmuch as collection of the tobacco smoke and tarry substances which are in the 0.27 micron particle size provides complete and absolute elimination in the conditioned area.

"Fresh air is limited to the oxygen requirements of the occupants, effecting considerable savings in the running costs of the heating and cooling equipment.

"The success of the design for smoke elimination may be assessed by a three-hour television program, using 40 kw of arc lights during the opening, with 400 people present. No smoke haze was visible during this period and a temperature control of 1° was maintained throughout the bowling and spectator area."

Sears will handle the air conditioning of Ten Pin Bowling's next two bowling centers to be erected at Warrawong and Corrimal, in New South Wales. Ten Pin Bowling is using A.M.F. automatic pin setting equipment in its operation.

Also, Sears has completed the air conditioning contract for the new 32-lane Olympic Bowling Centre at St. Leonards, Sydney, for Olympic Bowling Centres Pty. Ltd. This center will be operated with a central system air conditioning plant using the same primary and secondary filtration for smoke elimination, Lee noted.

In addition, Olympic Bowling Centres awarded Sears a further air conditioning contract for its 22-lane bowling center at Broken Hill, New South Wales.

"The air conditioning used in the above installation is of Australian manufacture with the exception of the Olympic Centre at St. Leonards, where we are using two Brunner direct-drive compressors each of 30 tons' capacity," Lee pointed out.

"The distribution system for the Adelaide installation of the Cross Road Bowl," Lee added, "was designed for the use of Pope pre-fabricated ductwork and is considered one of the biggest pre-fabricated ductwork installations in Australia."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Cincinnati Sub Zero To Take Part In India Industries Fair In New Delhi

CINCINNATI—Cincinnati Sub Zero Products announces that it will participate in the India Industries Fair to be held in New Delhi, India, for three months starting Nov. 15.

In an effort to establish person-to-person contact between the United States and foreign businessmen, the U. S. Trade Missions Program, under the direction of the Dept. of Commerce, is participating in the international trade fairs and expositions around the world.

A complete tool shop and metal treating facility will be set up and put into continuous operation for the duration of this India exposition.

Cincinnati Sub Zero Products' ultra-low temperature equipment will be an integral part of the processes to be shown.

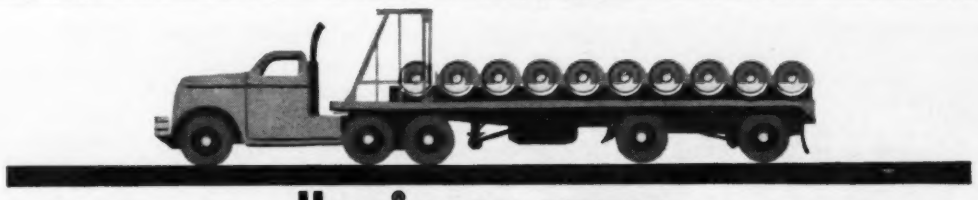
The company believes this particular fair will be of great importance, inasmuch as India represents one of the largest potential markets available.

Two 8-cu ft chambers, model ASU-85-8-HC, have been purchased by the Australian Government from Cincinnati Sub Zero Products, incidentally.

United Cooler Sales Up In United Kingdom

BARRIE, Ont., Can.—Universal Cooler Co. reports that sales in the United Kingdom market this year are expected to reach 2,000 freezers and cabinets.

The company started export sales in this market in July of last year and now has 55 distributors selling its freezers and other refrigeration products.



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We draw on many years of experience in handling more than 100 chemicals in bulk quantities! Your local Ucon Refrigerants representative has the whole, eye-opening story on these bulk delivery facilities and the *big savings* they offer. Call him today...and put this money-saving fleet to work for you! UNION CARBIDE CHEMICALS COMPANY, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, New York.

UNION CARBIDE CHEMICALS

Editorial

How International Air Conditioning and Refrigeration Progress Can Promote World-Wide Peace

WHY is the world in such a mell-of-a-hess today? WHAT has gone wrong? WHO is responsible for international uneasiness?

WHERE and HOW can decent people seek redress for the alarming international disharmony which disturbs their personal domestic happiness?

Nubbin of this quintuple problem actually is simple: Hungry people everywhere want to be fed well, and to have a go at American-style (turbulent though it may be) good living.

In the Southern hemisphere few citizens ever enjoy a fullsome meal. Their rice-and-lice menus obviously are substandard, and stubbornly aggravating.

Nor do they have access to modern "conveniences"—indoor plumbing, refrigeration, autos, air conditioning—which we in the Northern hemisphere take for granted.

Wouldn't YOU be looking for a fight if you were hungry most of the time? Wouldn't YOU listen to revolutionaries—of any political stripe—who promised you a better deal if your rulers could be overthrown?

In Communist Russia, half its citizens are farmers. Still, food is in short supply there—although ample compared to diets in southern climes.

In Red China, famine!

Contrast: in the U.S.A. — which is freedom personified—only six per cent of our citizens are farmers. But these scientific agriculturists produce an embarrassing oversupply of eatables.

Most important element in any nation's economy is food.

In Communist Russia, grain production for 1960 was 131 million metric tons, 18 per cent under its goal of 155 million. Meat production added up to 8,700,000 tons—18 per cent below the goal of 10,600,000 tons.

1960 Russian food production in many categories was less than levels registered before World War I!

Four decades of Communism—the imagined Utopian way of life which Russians and Red Chinese are trying to force on the rest of the world—have been a dud, foodwise.

On the other hand, American agricultural surpluses, more than ample to cover our needs up to a year and beyond in advance, probably can be an effective weapon in the economic "cold war."

Biggest need in so much of the world is *food*. The U.S.A. has it, in superabundance. The Russians and the Red Chinese haven't.

They won't be able to present influential exportable surpluses of foodstuffs in the near future without starving their own people.

Hidden factor herein is *refrigeration*. This factor is an American patent. In the U.S.A., we have almost ALL the "know how," with regard to preserving perishables *via* refrigeration.

Thus we augment our own food supplies because spoilage virtually is eliminated.

Right now, all the world yearns to learn how we stretch our agriconomy through the "magic" of refrigeration. Simple, really.

Let's "show how" our know-how!

In backward tropical areas, meats and fish spoil within hours. Refrigeration (American style) could augment local food supplies immensely by extending their useful availability—not only overnight, but for days and weeks and months.

Amazing what refrigeration could do for underfed peoples. Essentially, it *multiplies* their available food supplies.

Desperately hungry folk foment revolutions, spawn crimes and corruption, and disturb attempts to arrange peaceful coexistence.

Well-fed (thanks to refrigeration) populaces are content, happy, cooperative, and eschew international belligerence. Q.E.D.

Ergo: the extension of refrigeration around the world obviously can promote universal PEACE.

GUESS YOUR NICE BANKING HOURS ARE OVER NOW, EH, TOOTS? OLD BIGDOME GOT BACK FROM HIS TRIP THIS MORNING···
HAR-DE-HAR-HAR! WHO YOU TRYIN' TO KID? SAVE THAT FOR APRIL FOOL! I TALKED TO HIM YESTERDAY FROM PARIS··· HE'S ON HIS WAY TO OSLO···
THE WONDERFUL JET AGE! WHEN THE BIG CAT'S AWAY THE MOUSE CAN'T PLAY ANY MORE!
WAIT'LL YOU SEE THE DOUBLE TAKE MAGILLA DOES WHEN SHE SEES THE GAY BOULEVARDIER LIKE REEL FOUR IN A HORROR MOVIE····
THAT TWENTY-BUCK PHONE CALL WAS A BLIND! HE DIDN'T LET ON HE WAS CANCELING THE REST OF HIS TRIP···
J.R. BIGDOME
ABOUT TO COME FACE TO FACE WITH THE LITTLE MAN WHO SHOULDN'T BE THERE···
11-29
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They'll Do It Every Time

by Jimmy Hatlo

OFF THE CHEST

WIDE REACTION TO SALES ACADEMY EDITORIAL SHOWS GREAT AUDIENCE OF NEWS—GEORGE JONES

Air-Conditioning & Refrigeration Institute
Washington 6, D. C.

Editor:

You are fortunate in having a good media—the AIR CONDITIONING AND REFRIGERATION NEWS—through which you can speak.

We in the industry are even more fortunate in the fact that you use that media for the transmission of your thoughtful and intelligent comments so frequently, and for the many and wonderful contributions you make to industry in general, and to our industry in particular.

Your editorial on the Sales Academy is the most recent demonstration of the great audience reaction that you always get, and to which you are so justly entitled, and I have been interested in the comments you have reprinted.

Mr. Stokley, of Norfolk, Virginia, for instance, seems to agree that it is high time to reverse the trend of price-cutting and to restore, as he puts it, "pride, prestige, loyalty, and *profits* back in the business." Even my good friend Thom Muir, who says that he does not agree with me, actually does confirm my statement that incentive is needed.

His letter referred to a successful program conducted by a former employer of his, and I would like to point out that it was successful in part, if not entirely, because it was an *incentive* program. I wonder if Thom would have taken the time to listen to his instructor if his compensation for putting those instructions in practice had to be taken out of as low profit margins as we are living with today.

GEO. S. JONES, JR.

'SALES ACADEMY' IS PRETTY FANCY HANDLE FOR IDEALISTIC VEHICLE—FRANK KLEIN

Heidenreich, Klein, Deller & Associates
Cedar Falls, Iowa

Editor:

This for one will be a comment, or a group of comments, on your editorial in the June 26th issue of the NEWS—"Pregnant Idea for Our Industry"—etc.

I have been "commenting" until blue in the face, as you know, for years on how the end of the pipeline was getting plugged up in the industry because of the lack of singular as well as multiple cooperative efforts and programs to develop sales people at both manufacturing and field level.

I thought I did a pretty good job of explaining "how to" in SELLING FOR PROFIT which you published as a series in The NEWS in 1957-58. However, back to the Academy idea. Bob Price has an excellent insight into what is wrong, but the vehicle is idealistic with a pretty fancy handle.

Manufacturers and their "sales" staffs are now and have always been the culprits in sales and distribution in our industry. I hold no brief for myself, for you know I have been on both sides of the fence, in most of the organizational slots that count.

Since 1947 we have been building our industry's sales potential on field sales quicksand. Sales policies have turned to gimmicks, if they exist at all; field distribution outlets change with the wind and the shoestring bank account they had in the first place.

As manufacturers we have done, at times, a far superior job to the automotive industry when it came to cramming the dealer in the field with excess inventory. And how have we staffed our factory sales group? With either "pitch artists" or highly technical "sales engineers" turned presumably by the grace of God and hot weather into what we would like to be-

(Continued on next page)

AIR CONDITIONING HEATING & REFRIGERATION NEWS
F. M. COCKRELL, Founder

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(Continued from preceding page)

lieve as salesmen.

Joe Elliott, of York, Borg-Warner, hit the nail on the head in his recent interview in The NEWS, and his viewpoint is amazingly clear.

Though he didn't say it in so many words it hasn't taken him long to find out that the industry's manufacturers are still playing cops and robbers with each other on price, product, distribution, and competitive knowledge.

Fundamentally the job needed done is not an Air Conditioning Sales Academy, at this stage, but a Committee on Sales Development of ARI, composed of the best talent in the business to arrive at a program, CO-OPERATIVELY acceptable and IMPLEMENTED by all participating members, directed to accomplish the following:

1. Specific code qualification of distribution outlets.
2. Development of a framework for bringing into being an INDUSTRY basic sales training program for each segment of the cooling and heating field distribution effort. At the same time a similar framework for the training of sales people at manufacturing level.
3. Development of a program that will make it possible, financially, for a dealer and or distributor to keep a good potential salesman long enough until he can earn his salt.

These are general, and they break down into many, many subsections, but these in my opinion have to precede any such idealistic notion as a Sales Academy.

FRANK D. KLEIN

WHEN DO WE START?

Wood Air Conditioning & Supply Co.
Mt. Pleasant, Texas

Editor:

Your article on "an Air Conditioning Academy for Sales" excellent.

When do we start?

C. A. WOOD

SEEKS DATA ON INADEQUATE MFR. CONTACT ABROAD

The Ingalls Shipbuilding Corp.
Pascagoula, Miss.

Editor:

I note in your column "Inside Dope" which, incidentally, I read each week with great intest, a reference to the foreign market. You specifically used Hong Kong as an example of inadequate manufacturers' contact with their distributors. Is this generally true throughout the foreign market?

I enjoy reading the NEWS and find it quite informative. I do not always agree with some of the opinions voiced by your readers and, personally, would like to see more articles on basic design principles. Generally, however, I feel that you are performing a definite service to this industry.

F. W. PARDOE

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ON UL AND CERTIFICATION— 'INDUSTRY IS AN ADOLESCENT'

Editor:

Two articles which appeared in recent issues of the "NEWS" illustrate quite emphatically how far the air conditioning industry has to go to get out of its adolescence.

I am referring to the article by George Hanning titled "How Detroit Handles Unapproved Units" in the July 3 issue, and your article concerning the pro and con of the ARI certification program which appeared in the July 10 issue.

After almost twelve months of red tape, we finally received U. L. listing on a 5-ton split system heat pump, which was essentially the same as our 3-ton heat pump that took three months to gain approval. The trouble was due to a faulty fan relay which was satisfactory on the 3-ton unit but failed when installed on the 5-ton unit.

The red tape was necessary because U. L. must use the manufacturer's facilities for part of the tests and their own facilities for the rest of the tests.

We could ill afford to delay production on all of our air conditioners and heat pumps while we await the listing approval. Hence, we do not bother with U. L. on all of our air conditioners so we are forced to try the patience of city inspectors such as those in Detroit.

In contrast to the time to gain U. L. approval, it took less than a week for Electrical Testing Laboratories to test one of our units. This short time was in spite of the fact that in order to pass the test we had to send a replacement compressor motor overload protector, which had a manufacturing defect.

The ARI tests are more severe and much more involved as far as the operation of the unit is concerned than are the U. L. tests. The discrepancy, therefore, must lie in the fact the personnel at E. T. L. are qualified air conditioning test men, devoted exclusively to testing the performance of the air conditioners in accordance with easy to interpret, pertinent standards established by the air conditioning industry.

Therefore, why could not the A. R. I. certification program be set up to incorporate the tests for safety that are required by U. L. and the National Board of Fire Underwriters? It could be patterned, perhaps, after the American Gas Association so as to have the performance and safety tests under one roof.

I am a proponent of the certification program and I know of several instances where ratings have been reduced, some by as much as 2,000 Btu per hour on a 3-ton unit. This has done a lot to separate the comparatively low cost units which did not have the capacities claimed from the close-to-full-capacity units which had sufficient coil surfaces and consequently cost more to manufacture.

Thus, one of the most important contributions the certification program can make is to retard the cut prices and down grading of air conditioners.

The last two paragraphs of your article have a lot of merit, but I wonder how many manufacturers of air conditioning units would actually reject a dealer for not adhering to a Silver Shield-type of program.

I fear that it is up to the engineer to do everything he can to design potential problems out of the equipment so as to overcome the installer's deficiencies as much as possible.

CHIEF ENGINEER

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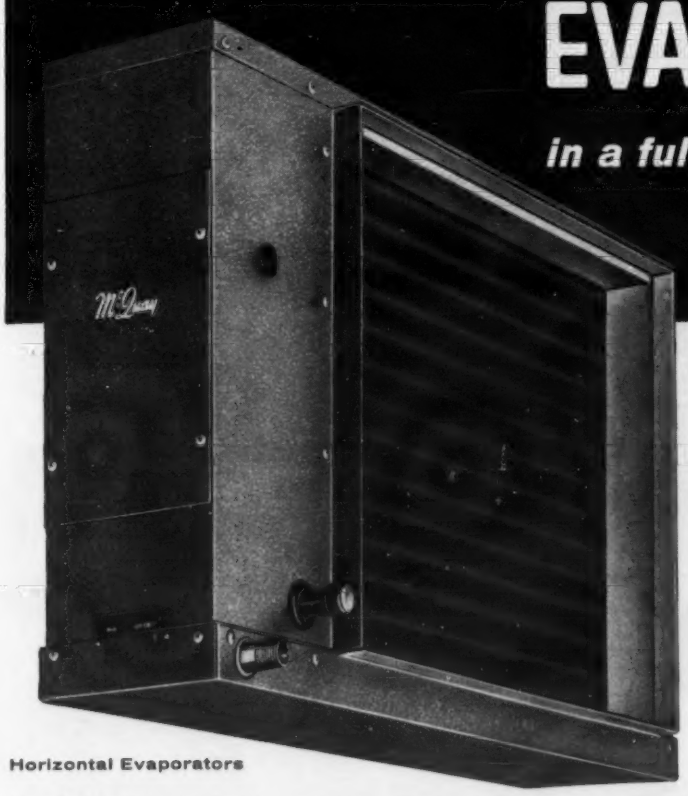

Horizontal Evaporators

Vertical Evaporators with sliding removable coil section

Residential air conditioning with complete dependability is only one of many features you can expect with McQuay residential evaporators. Designed for either horizontal duct mounting or vertical mounting in the warm air outlet of up flow or counter flow furnaces, their wide flanges and compact dimensions simplify installation in any warm air heating system.

There is a McQuay horizontal or vertical residential evaporator to meet the needs of every home in any climate in 2—3—4—5 and 7½ ton nominal capacities. Quality constructed with patterned aluminum casings completely insulated, these McQuay evaporators will harmonize with any surroundings.

For complete information contact your nearest McQuay wholesaler or write to McQuay, Inc., 1607 Broadway N. E., Minneapolis 13, Minnesota.

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AIR CONDITIONING • HEATING • REFRIGERATION

Refrigerator Will Reach -100°F In One Hour

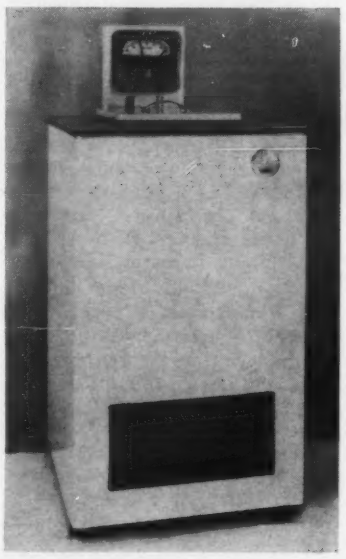
● A new model low-temperature refrigerator has been announced by Lec Refrigeration, Ltd., Dept. AH&RN, Bognor Regis, Sussex, England.

Being produced at less than £300 (United Kingdom price), the model will meet the requirements of small industrial training laboratories, universities, technical colleges, and medical research establishments, according to the company.

The refrigerator can pull temperatures down to -100°F in one hour, it was indicated. It is fitted with an indicating thermostat, on/off switch, and indicating lights. Measurements are: External—21 in. by 21 in. by 36 in. high; internal—10 in. by 10 in. by 10 in.

"The tank will hold several gallons of liquid which can be pumped around secondary circuits thereby providing a flexible cold source," the company stated.

The refrigerator is powered by the Lec hermetic type refrigeration unit.



Only halogenated refrigerants are used in this model.

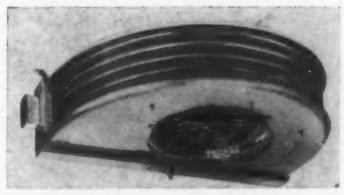
Filtrion Treats Boiler Water In Plant

● A line of "Waterco" products designed to solve many water treatment problems, announced by Ster-O-Matic, Inc., Dept. AH&RN, Mundelein, Ill., includes Filtrion for boiler water treatment, and an anti-fouling cooling tower treatment system.

Filtrion is a water processing system for in-plant use on either steam generation, cooling and heating, or process-water in boilers from 100 to 2,000 hp.

The unit shown at a line-announcement meeting was a single boiler Filtrion processing system. The company said it reduces water requirements, cuts costs of chemicals, reduces fuel requirements, and eliminates many maintenance problems. In addition, it was reported that Filtrion increases boiler life.

Among other products "which have been researched and are being tested" is Water Tower Clarification which is similar to Filtrion.



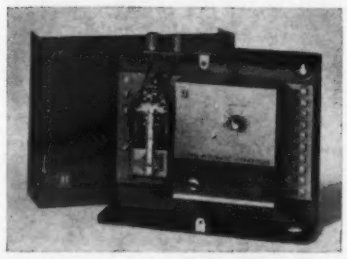
Half-Round Gives More Head Room

● A redesigned "Half-Round" evaporator, has been announced by the Danville Div., Bohn Aluminum & Brass Corp., Dept. AH&RN, Danville, Ill.

"Engineered to provide more head room and usable space in walk-in coolers and refrigerated areas, the new design permits mounting directly against the back wall and ceiling; air is drawn in from below and discharged radially in a full 180-degree arc," it was pointed out. "The fan panel is hinged to a stationary drain trough; the drain line can be permanently installed but there is still easy access for servicing the unit.

"A newly simplified hanger system of slotted hangers has been developed for added ease in mounting the unit. A template for locating mounting holes is furnished with each unit. The electrical junction box is now located on the outside of cooler to make the electrical hook-up much easier."

The Half-Round is produced in light sizes with capacities ranging from 2,600 to 14,900 Btuh at 10°t.d.



Converts Temperature To Air Pressure

● A new transducer to electronically convert temperature into air pressure has been announced by the Commercial Div., Minneapolis-Honeywell Regulator Co., Dept. AH&RN, 2727 South Fourth Ave., Minneapolis 8.

The transducer, called the Mark III, has transistorized circuitry and etched circuit boards.

A transducer is the link between electronic sensing and pneumatic operation, which is said to permit air conditioning control systems to use the best features of each.

"With the transducer," the company said, "the sensitivity, flexibility, and fast response of electronic thermostats can be combined with the smoothness and power of pneumatic operation. In effect, the electronic system becomes the sensitive 'nerves' of a control system while the pneumatic system provides the 'muscle.'

"The new Mark III transducer can take inputs from up to three different thermostats. Outputs can be sent to pneumatic motors, dampers, and valves. The transducer also can link a pneumatic system to a centralized electronic control center to permit operation of an entire building from one remote location."

Bow Kit for Welding Plastic Products

● A complete plastics-welding kit is offered by the Kamweld Products Co., Dept. AH&RN, 932R Washington St., Norwood Mass.

The model 15-TM is especially designed for training of welders and for maintenance and repair of plastic-fabricated products.

The kit consists of a Kamweld plastics-welder model 14-HW, an aluminum welder-stand, a round welding tip, a tack-welding tip, a 16-ft neoprene air hose with an electrical three-wire cord, "practice" pieces, instruction manual, and descriptive bulletin—all contained in a steel carrying case. The welder has an air-flow regulator and gauge; an air-cooled handle that houses the heating-element connector with a 320-watt stainless steel element, and a barrel.

The equipment is said to be suited for the tack-welding, hand-welding, and medium-speed welding of many thermoplastics.

In The Lead With Ucon® Refrigerants

"Fustest with the mostest" is UCON IKE's history thus far, as witness the pioneering of the ring-top refrigerant cylinder, introduction of the handwheel cylinder valve, and instant cylinder deposit refunds . . . all important firsts in packaging and convenience.

And being in the lead is something UCON IKE and the friendly folks he represents, firmly intend to *continue*. When you *really* need something, *we'll deliver* — whether it be in packaging conveniences or helpful service.

Our promise: being on our toes to meet *your* every on-the-job refrigerant need.

For the most compact and *convenient* line of refrigerants . . . See your UCON Refrigerants wholesaler.

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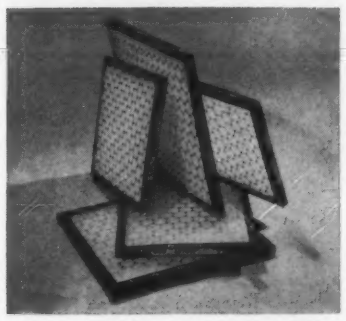
Color Coded Filter Fights Bacteria



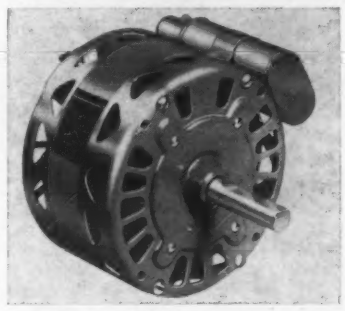
● A new hexachlorophene-treated, color-coded glass fiber furnace filter has been introduced by American Air Filter Co., Inc., Dept. AH&RN (PD), 215 Central Ave., Louisville 8, Ky.

The filter contains three new features. "The white AMER-glas filter is treated with the 'health sentinel' hexachlorophene to help fight bacteria," the company said. "The 'dense pack' filtering media, which is spun with progressing density from one side to the other, provides more dirt-catching efficiency per square inch than ever before.

"Color-coding of the different sizes is a new feature of the AMER-glas filter. The customer no longer has to remember the size filter he needs for his furnace, but merely the color of the label. Five different colors are standard production items.

"For instance, the furnace owner who uses a 16 by 20 by 1 filter would choose a filter with a green label. A 20 by 25 by 1 in. filter has an orange label. A 20 by 20 by 1 in. filter carries a red label. A blue label is applied to the 16 by 25 by 1 in. filter. All other sizes contain a yellow label."

Motor Gives More Hp. In Smaller Package

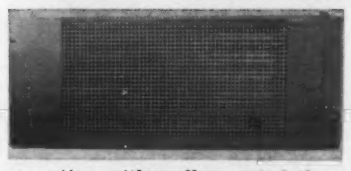


● Only 4⅞ in. in diameter, a new fractional horsepower electric motor meeting "the new requirements for a permanent split-capacitor motor that produces more horsepower in a smaller package" has been announced by The Redmond Co., Inc., Dept. AH&RN, Owosso, Mich.

The company said the motor is designed for a wide range of applications in the heating, refrigeration, air conditioning, ventilating, and appliance industries. Designated type CR, the motor "combines higher starting torques with increased efficiency," it was stated. "The low current requirements of this motor result in less heat rise —makes the motors cooler running, longer lasting, and more economical to operate.

The type CR is available in both 4-pole and 6-pole design, from 1/20 through ¼ hp.

Electric Heater Serves Small Areas

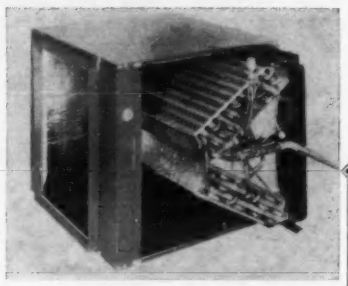


● New natural convection electric heaters for selected area heating in small areas such as home workshops, insulated garages, laundries, basements, utility rooms, and small storage areas are now available from the General Electric Co., Electric Comfort Heating Section (NB), Dept. AH&RN, Appliance Park, Louisville, Ky.

Available in three Btu/hr ratings, the heaters may be wired for operation with wall-mounted thermostat. Pressed steel case is designed to withstand occasional knocks and jars, and safety against overheating or scorching of walls is assured by heat baffles which direct the heated air flow evenly throughout the space.

Case is finished with enamel. Perforated grille is off-white, and the ends of the unit are blue-gray. Unit can be attached to wall with four screws and the power connected. It is recommended that the heaters be located a minimum of 2 ft above the floor and near cold air inlets, particularly windows.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.



Horizontal Coil Case Accepts V-Coil

● A new coil case for its horizontal furnace line which will accept the same V-coil used on its upflow and downflow forced-air furnaces has been introduced by Day & Night Mfg. Co., Dept. AH&RN, P.O. Box 2222, La Puente, Calif.

"This makes a single type of coil applicable for all air conditioning jobs, whatever type of heating installation is involved," the company said. "The coil case used for each furnace is different, of course, but these cases are shipped knocked down in easily stocked cartons and assembly on the job is simple."

The new coil case for horizontal furnace is the 48/60 DNH which accommodates Day & Night's 48,000 and 60,000 Btu capacity VC coils. Introduction for other sizes at a later date will complete the program of "across - the - board" simplification.

Home Humidifier Has Only One Moving Part

● A new residential humidifier (model HR-2A) for wintertime humidity control in forced-air installations is available from the Air Conditioning Div., Westinghouse Electric Corp., Dept. AHRN, Staunton, Va.

The humidifier has a 0.2 gph atomizing capacity and is designed for simple installation in the return duct of any heating or heating-cooling system, the company said.

"The unit operates on 115-volt, 60-cycle, single-phase power, and uses less current than a 40-watt lamp," it was explained. "Since it is constructed of rustproof materials and has only one moving part—the centrifugal atomizer—it is maintenance-free."

HAVE YOU USED?

THE NEW REVERE ACR COPPER TUBE

If you haven't, get in touch with the Revere Distributor right away because you're missing a good bet.

Revere ACR Copper Tube comes in hard temper in 20′ straight lengths, in sizes shown in table at right. It is color-coded in blue for fast, sure identification. To make things even more simple, actual O.D. in inches is stamped on each length of tube.

The interior of Revere's Air Conditioning and Refrigeration Copper Tube is meticulously cleaned at the mill and immediately capped on both ends with plastic caps to insure dirt-free, moisture-free delivery on your job site.

Order your requirements for Air Conditioning and Refrigeration Copper Tube (ACR) today from the Revere Distributor located nearest you. You'll find Revere Distributors, ready to serve you, in major cities from coast to coast.

REVERE ACR COPPER TUBE
For Air Conditioning & Refrigeration

Actual O.D. in Inches	Std. Water Tube Size	Wall in Inches	Pounds Per Foot
.375	¼	.030	.126
.500	⅜	.035	.198
.625	½	.040	.285
.750	⅝	.042	.362
.875	¾	.045	.455
1.125	1	.050	.655
1.375	1¼	.055	.884
1.625	1½	.060	1.14
2.125	2	.070	1.75
2.625	2½	.080	2.48
3.125	3	.090	3.33
3.625	3½	.100	4.29
4.125	4	.110	5.38

REVERE COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
Executive Offices: 230 Park Avenue, New York 17, N. Y.
Mills: Rome, N. Y.; Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles, Riverside and Santa Ana, Calif.; New Bedford and Plymouth, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb.; Sales Offices in Principal Cities.
Distributors Everywhere

Can Tapping Valve Offers 'Major Advance'

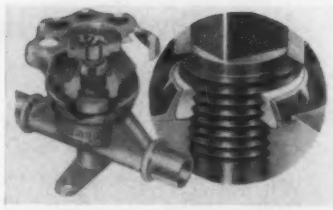
● A "major advance" in tapping packaged refrigerant containers has been announced by Watsco, Inc., Dept. AH&RN, 1020 East 15th St., Hialeah, Fla.

"Watsco's all new Twin Port can tap valve enables the user to connect a gauge and charging line in series to one or any number of packaged refrigerant containers, thus eliminating the need for a charging manifold," the company stated. "Two sealing caps are also included for use when it is desirable to close off one or both ports.

"The Twin Port is a one-piece valve made almost entirely of Delrin, the new du Pont plastic. The steel needle and shaft is one piece, thus making it impossible for the needle to loosen and fall out. An easy to grip Delrin 'T' handle cannot twist off or loosen.

"As part of Watsco's new merchandising campaign to provide better and more practical packaging, the Twin-Port will be packaged in a handy plastic pouch with a snap lock. This pouch is designed to protect the threads of the valve and to be used to carry other small parts, if desired. Although there are added features, the Twin Port is competitive in price."

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.



Valves Have Positive Moisture Barrier

● Superior Valve & Fittings Co., Dept. AH&RN, 1509 W. Liberty Ave., Pittsburgh 26, is now manufacturing its "Tuffy" and "Globe" refrigerant valves with the new Superior "Sealzall," patented moisture seal in sizes up to 1⅛ in.

Made of resilient "Teflon," this positive moisture barrier prevents condensation from seeping down between the stem and bonnet, causing valve 'freeze-up,' the company said. The Sealzall is an integrated part of the Tuffy and Globe valves. It does not turn with valve opening and closing.

Ice Cubers, Chippers Have 'Fiberglas' Cabinets

● New ice cubers and ice chippers with "Fiberglas" cabinetry are being marketed by Kodiak, Inc., Dept. AH&RN, 297 Commercial St., St. Paul 6.

Kodiak's present production calls for chippers with a capacity of 250 and 550 lbs. The Kodiak Cuber with a daily capacity of 200 lbs is in production at present and soon larger capacity cube machines will be available, it was stated.

Kodiak is offering the machines in five different Fiberglas colors plus white. Inert foam between cabinet walls is utilized for insulation. Mechanical units are located above storage bins for easy servicing.

The model CU-200 Cuber stands 39 in. high, suitable for use under a service bar. The CU-200 produces 200 lbs of clear, solid cubes per day and has a storage capacity of 250 lbs, the company said.

Rigid Foam Insulation

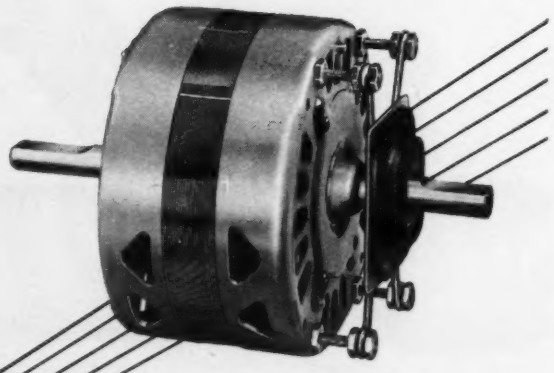
● "Hewfoam" rigid urethane foam insulation for industrial, commercial, and institutional construction and remodeling has been introduced by H. E. Werner, Inc., Dept. AH&RN, 2990 Industrial Blvd., Bethel Park, Pa.

HIKE YOUR PROFIT LINE— WITH Redmond's

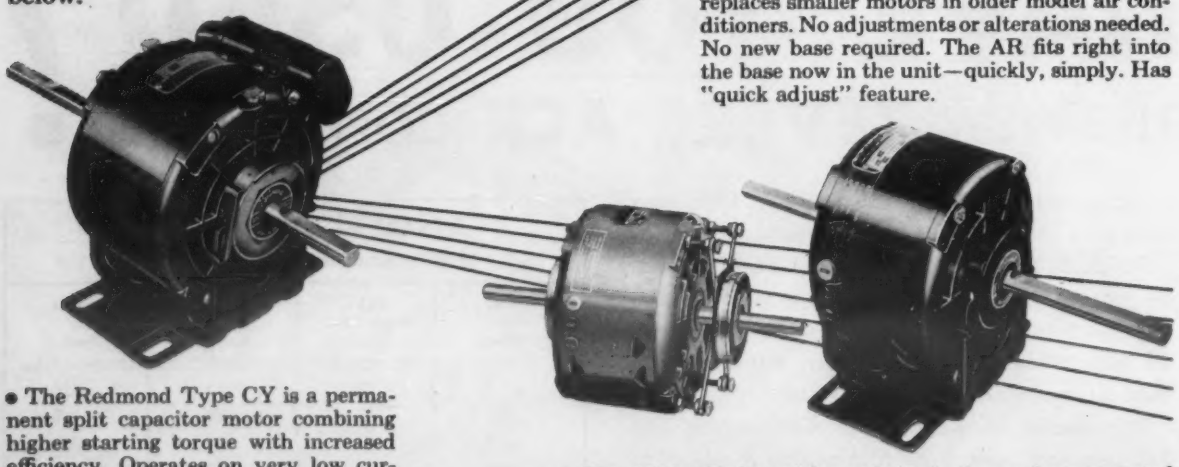
COMPLETE LINE OF AIR CONDITIONING REPLACEMENT MOTORS

Here's the most complete line of air conditioning replacement motors in the industry. Sales and service profits will really climb because these motors increase your replacement market.

They're dependable, quiet, fool-proof—and they'll meet all of your requirements for replacing motors in room air conditioners with from 1/3 to 3-ton capacities. A full range of bases is available for base-mounted motors. For complete details on these easy-to-sell, simple-to-install motors, send for the free folder shown below.



● Redmond's new Type AR shaded pole motor replaces smaller motors in older model air conditioners. No adjustments or alterations needed. No new base required. The AR fits right into the base now in the unit—quickly, simply. Has "quick adjust" feature.



● The Redmond Type CY is a permanent split capacitor motor combining higher starting torque with increased efficiency. Operates on very low current, hence is cooler-running, more economical. Is totally enclosed for protection against high humidity.

● The AY by Redmond is available both as a base-mounted motor and with a "quick adjust" feature. Each type has drip-proof stator, with top half of motor enclosed, to guard against moisture. Easy to install because you just mount it in and plug in the leads. No wires to get in your way. Adjustable end mounted motors require only two simple adjustments to fit into most bases.

DISTRIBUTORS DIVISION

◀ **Send For FREE FOLDER** containing complete information on Redmond's money-making line-up of replacement motors for room air conditioners. Ask for "PROFITS FROM REDMOND."

The Standard of Dependability

Redmond Company, Inc. OWOSSO, MICHIGAN

Subsidiary of CONTROLS COMPANY OF AMERICA

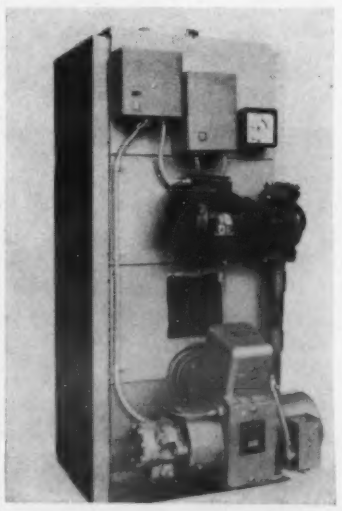
COOKSVILLE, ONTARIO • ZUG, SWITZERLAND

Single Inlet Mixing Box Developed

● A single inlet mixing box has been developed by the air distribution division of Barber-Colman Co., Dept. AH&RN (2321), Rockford, Ill., for use in interior zones that demand cooling the year around.

"Temperature control in the space is accomplished by providing more or less cooling, with a constant volume of air delivered at all times," the company pointed out. "On a thermostat demand for less cooling, the amount of cool primary air is reduced, and at the same time secondary air is induced into the primary air stream from a ceiling return plenum."

The ratio of secondary to primary air volume is adjusted by a single control motor positioned by a temperature sensing element in the controlled space.



Boiler-Burner Rated at 490 sq ft HW Radiation

● A new #74 packaged and assembled cast iron boiler-burner unit rated at 490 sq ft HW radiation has been announced by Quiet Automatic Burner Corp., Dept. AH&RN, 17 Grove St., Montclair, N. J.

Unique feature is new light weight pre-formed combustion chamber, the company said.

It is completely assembled with cast iron oil burner, Minneapolis controls, B & G circulator, flovalve, and electrical wiring harness. The company also makes four other sizes from 525 sq ft to 875 sq ft radiation.

Preheater Section Offers Close Temp Control

● A new steam or hot-water preheater section for air conditioning systems offers close temperature control, virtually no stratification, and maximum protection against freezeup, according to L. J. Wing Mfg. Co., Dept. AH&RN, 2300 North Stiles St., Linden, N. J.

Tubes are individually and readily replaceable. The unit can be used as a heater in fresh-air-supply and other systems with no preheat unit.

The new IFB section utilizes Wing's integral face-and-by-pass damper system for temperature control. Steam pressure or hot water flow remains constant regardless of inlet air temperature variations, according to the manufacturer.

"The face-and-by-pass system controls outlet temperature by thermostat - controlled positioning of dampers to vary the proportions of air passing over heated coils or through by-pass passages between coils," it was explained. "A new damper design provides constant pressure drop through the unit regardless of damper position."

Available in 11 sizes for installation in ducts from 3 sq ft to 48 sq ft in cross-sectional area, the IFB sections may be installed singly or in multiple arrangements to fit any size duct. Minimum steam pressure is 5 psig; maximum is 200 psig with standard construction. Optional materials are available for higher pressures and temperatures or unusual atmospheres.

Portable Heater Looks Like Baseboard Unit

● Spartan Electric Radiator Corp., Dept. AH&RN, 52-55 74th St., Maspeth 78, N. Y., reported the introduction of a new type of portable electric heater.

"This heater carries the trademark 'Minivector' because of its miniature convector, combining the sleek appearance of baseboard electric heat and the safety of a fully enclosed convector," the company said. "Other features include modern shadow-box frame, automatic room temperature thermostat control, and indicator light."

The Minivector will be available in 1,000 and 1,250 watt capacities. The units are 11 in. high, 3½ in. deep, and 4 to 5 ft wide.

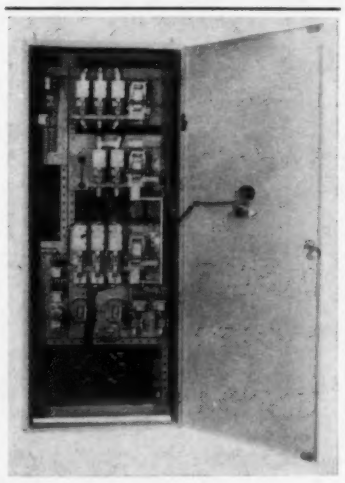
'Roll-Out' Beer Dispenser, Service Bar Available

● The "Bar Mobile," a new "roll-out" draft beer dispenser and service bar, is now being produced by the Beverage-Air Co., Dept. AH&RN, Spartanburg, S. C.

The unit is especially designed for small-group service at parties, conventions, and other gatherings. This 6.5-cu ft electric refrigerator will accommodate ⅛, ¼, or ½ barrel beer kegs, and up to 5 lb capacity CO_2 tanks with regulators, the company said. The Bar Mobile is available with either a detachable, fold-away faucet that stores inside the cabinet when not in use; or a heavy-duty, air-cooled draft arm and faucet. Each unit is supplied with either Peerless or Golden Gate tapping equipment, it was pointed out.

Constructed with stainless steel service top, the Bar Mobile requires 23 in. by 27 in. of floor space. Standard cabinet finish is baked-on hammertone, gray enamel. It has a ⅓-hp hermetically sealed refrigeration unit.

The company also announced the "Sociable Cooler," a new "home beverage center," designed as a mobile second refrigerator. The unit also accommodates a standard ⅛ barrel draft beer container and will dispense through a special fold-away faucet.



Starter Features 25% Size Reduction

● A new reduced voltage autotransformer starter which is said to feature "about a 25% reduction in size" for use in the air conditioning industry is offered by the Westinghouse Electric Corp., Dept. AH&RN, P.O. Box 2099, Pittsburgh 30, Pa.

"The starter is a size 6 controller and is only 90 in. high, 36 in. wide, and 28 in. deep, as compared with the old design control having the same height but with a 68-in. width and 42-in. depth," the company said.

"The dimensional reductions were made possible by new small size contactors. These contactors are rated 600 volts, 600 amps for either front or rear connected and are mounted on a steel panel 19¼ in. wide, 13¾ in. high, and 8 in. deep."

Refrigerant Measuring Tube Calibrator Offered

● A new 4 in. by 10 in. refrigerant measuring tube calibrator in slide chart form has been announced by Airserco Mfg. Co., Dept. AH&RN, 435 Melwood Ave., Pittsburgh 13.

It is designed to give the cooling service engineer the corrected charge of refrigerants 12, 22, 114, or 500 for any temperature between 60°F and 130°, and for all makes and sizes of measuring tubes.

The direct reading calibrator is available for immediate delivery.

WHY TRAP-DRI®?

BECAUSE

costly Egyptian cotton plus deep filtration tunnels give 5 to 9 times* the filtering area of conventional filters

*For particles down to 5 microns in size.

The diamond pattern on the filter element is no mere decoration. It's a pattern behind which you'll find a honeycomb of diamond-shaped tunnels for full-depth filtration. This filter design can only be achieved through use of expensive, long-fibre Egyptian cotton. Just one of the investments we make to give you refrigeration's finest drier-filter-strainer . . . perfect protection against corrosive acids, moisture, dirt.

Other TRAP-DRI features include *a balanced blend* of PA 400 silica gel and molecular sieve that completely adsorb acid and acid-forming moisture.

Write today for facts about TRAP-DRI and other products of the Heating and Air Conditioning Division, Controls Company of America . . . creators of new ideas for control of time, temperature, flow and motion.

Surface-type filter (left) — Dirt collects on outside only, gradually closing filter.

410 filter (right) — Dirt is collected in deep, large-capacity tunnels without clogging filter.

Creative controls for industry

CONTROLS COMPANY OF AMERICA

HEATING AND AIR CONDITIONING DIVISION

2460 N. 32nd Street, Milwaukee 10, Wisconsin • COOKSVILLE, Ontario • ZUG, Switzerland

JAPAN

Cooling, Refrigeration Equipment Finally Being Imported, Produced by America's Best Pacific Customer

By George F. Taubeneck

TOKYO — The big news in Japan, so far as our industry is concerned, is that many ingredients in, and types of, air conditioning and refrigeration equipment actually are being imported and produced here . . . at long last.

Believe it or not, the household refrigerator . . . the first and basic item . . . has been slow catching on, even in Tokyo.

Most wanted better-living item here is the electric rice cooker. Following that, in order, come radio, TV, washing machines, vacuum cleaners.

With the rise of individual incomes, however, small home refrigerators and commercial refrigeration are beginning to thrive. Tentatively, central station air conditioning is being produced, too, along with cumbersomely bulky room air conditioners.

Exports to Southeast Asia

Most cooling-product exports are sent to southeast Asia; but in general these Japanese manufacturers can't compete either in price or quality on world markets.

Example: a 4 cu ft household refrigerator sells for around $300; a half-ass-horsepower room air conditioner may be priced at $450. So, American room air conditioners probably will be imported here soon.

Carrier (Toyoh Carrier, partly Japanese owned) is the only American air conditioning manufacturer operating a plant here as of now. Worthington supports a Nipponese factory which makes pumps, but not air conditioning equipment.

Big Names In Manufacturing Field

Among the big local names in the refrigeration and air conditioning manufacturing business are Mitsubishi, Toshiba, Hitachi, Osaka Kinzo Ku, and Ebara.

Minneapolis-Honeywell is represented in Tokyo by two exceptionally capable young men, Edson Spencer (a Rhoades Scholar) and Richard Flanagan. They've been among our better mentors in this preliminary report on Japan.

Yamatake-Honeywell Keiki Co. (another U. S. A.-Japan joint venture) manufactures a variety of Honeywell products, including air conditioning controls, and markets these along with devices imported from Minneapolis.

The Jimboh Trading Co. is Japan's distributor for Tyler, Rheem, American Furnace, Temco and Tappan. They displayed Tyler frozen food cases at the Tokyo International Trade Fair, which was staged April 17 to May 7.

Nihon Dennetsu Co., of which H. Muramoto is the manager, sells and services General Electric refrigerators and packaged air conditioners on a limited basis.

Mr. Muramoto also manufactures industrial heaters and humidifiers. He hopes to make ice makers and beer coolers; but is stymied by a shortage of satisfactory condensing units.

Exclusive representative for Chrysler Airtemp, Trion, Barnebey-Cheney, Research Appliance, Claude Schneible Co., and Elex A. G. of Switzerland is Kindoh Industries, Ltd.

President Yoshizo Kondoh of this comprehensive company reports that he imports, sells, installs and services air conditioning, refrigeration, heating, air filtering, air purifying, and dust control equipment.

Oddly enough, the Victor Company of Japan, Ltd. (a radio-phonograph concern related to RCA in New York and HMV in London) manufactures room air conditioners here. T. Sherai, the manager, understandably wasn't communicative.

And now we come to the big one: Mitsubishi Electric Manufacturing Co. This giant corporation is General Electric, General Motors, U. S. Steel, AT&T, and half the Wall Street Board wrapped up in one enormously diverse industrial complex.

Mitsuo Anjo of this firm informs us that Mitsubishi manu-

IN THE FAR EAST, although living standards are rising rapidly, women still are toters of heavy loads.

LOOK! 32 gas-fired and 19 oil-fired models in the complete new CARRIER furnace line!

There's a new Carrier Weathermaker* Furnace to meet the needs of every customer in this restyled, redesigned, modern Weathermaker line. It includes gas-fired and oil-fired models . . . models for heating only and models designed for the easy addition of cooling . . . upflows, counterflows, horizontals and loboys. Look them over—note the complete range of models and capacities.

And that's not all. Carrier stands behind you with the industry's most comprehensive programs for financial and technical assistance plus complete training in sales, installation and service that permits you to assure your customers complete comfort all winter long.

Get the profit picture of a Carrier dealership from your Carrier distributor, listed in the Yellow Pages. Or write Carrier Air Conditioning Company, Syracuse 1, New York.

*Reg. U.S. Pat. Off.

Carrier Air Conditioning Company

factures household, commercial, and industrial refrigeration products ranging from one-quarter horsepower to 350 hp. Also:

Package air conditioners from 1 to 30 tons. Water coolers, ice cream cabinets, open-type food store cases, and electronic air cleaners.

Mitsubishi acts as an air conditioning contractor and servicing firm in Tokyo, Osaka, Nagoya, Fukuoka, Sapkoro, Hiroshima, Takamatsu, and Toyama. Additionally, it's a Westinghouse licensee.

Two interesting independent engineers who read the NEWS (incidently, all the above mentioned people are subscribers, too) are Sabaro Homma and M. Yanagimachi.

The former (Homma) is a specialist on automotive air conditioning. He worked for Frigidaire in the United States from 1949 to 1956, now designs and manufactures special mobile installations on his own.

Yanagimachi is a distinguished consulting engineer who not only pioneered the heat pump in Japan, but has built four solar-energy homes.

Competition among domestic manufacturers of packaged-type air conditioners is "quite severe" now and, with the government planning to approve importation of American window-type units, it will become "more drastic," in the opinion of Minoru Osoguchi, managing director and import manager of Nippon Air Conditioners, Inc., here.

His company claims to have introduced packaged-type air conditioners to this country, following World War II. (Japan's air conditioning industry began before the war, but as Osoguchi pointed out, "it was indeed in a very primitive stage.")

Then, he related, "depending upon our engineering staffs' study and instructions, the Mitsubishi Electric Mfg. Co. started the manufacturing of packaged type air conditioners, and gradually other electric manufacturers followed.

"It is the government's close limitation of dollar allocation thenceforward that accelerated this domestic manufacturing, and now the competition among these makers (such as the Mitsubishi Electric Mfg. Co., Hitachi, Ltd., Osaka Metal Industry Co., Toshiba Electric Co., Fuji Electric Co., Toyoh Carrier Engineering Co., Ltd., Shin Mitsubishi Heavy Industry Co., etc.) is sharp.

Government Expected To OK Room Unit Imports

"Furthermore, under the recent tendency toward Free Trade, the government is planning to approve of importation of American window-type room air conditioners this year, so that competition will be more drastic.

"We think, however, since this is governmental policy to cut down the prices and raise the quality of our domestic products, a good stimulation will be given to this line of our industry."

AT THE FOREIGN CORRESPONDENTS' CLUB, George Taubeneck gets the word from Gene Smith of the *New York Times* (wearing glasses).

In June, 1949, under an exclusive authorized distributor agreement covering Japan, Nippon Air Conditioners was established to distribute Chrysler Airtemp equipment.

Then, after research, this firm developed fully automatic constant temperature and humidity systems in order to meet pharmaceutical and medical demands and also requests from various precision processing industries.

In 1951, in cooperation with Trion, Inc., Nippon Air Conditioners succeeded in providing "really sanitary and purified air by removing airborne contaminants . . . and by cleaning the ventilated air in conditioned areas."

Thereupon this firm began installing electrostatic precipitators in electronic tube, photo film, chemical, textile spinning, pharmaceutical, and food processing factories.

In 1953, Nippon Air Conditioners arranged an authorized distributor agreement with Mitsubishi Electric Mfg. Co. to handle its refrigerating, air conditioning, and air filtering equipment.

Atomic Energy Research Laboratory

The following year, Nippon Air Conditioners designed and constructed atomic energy research laboratories, making good use of its experience in the air filtering field.

"As for winter air conditioning," Mr. Osoguchi relates, "our fully automatic hot air furnaces are popular with our customers, especially for heating factories.

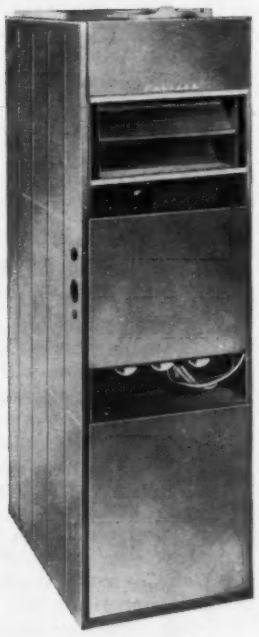
"Furthermore, we have given a new twist to our domestic heating market by introducing and distributing Schwank infrared gas spot heaters which were originated in Germany."

Principal customers of this firm include 40 manufacturers in the electrical machinery, pharmaceutical, food, paper, and textile industries; plus 21 broadcasting concerns, 15 atomic energy laboratories; and assorted banks, offices and hotels.

Early this year Bundyweld steel tubing began rolling off production lines in Japan. Manufacturer (affiliated with Bundy

(Continued on next page)

LOOK! 32 NEW CARRIER GAS-FIRED FURNACES



BUDGET MODELS:

7 UPFLOW from 70,000 to 120,000 Btu input

6 COUNTERFLOW from 80,000 to 120,000 Btu input

8 HORIZONTAL from 80,000 to 125,000 Btu input

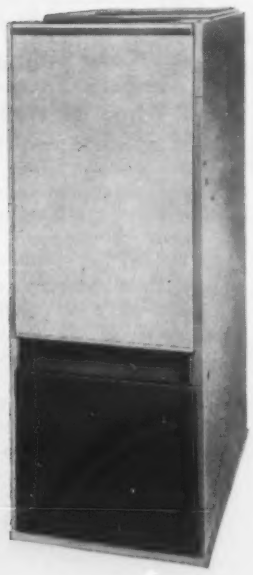
STANDARD MODELS:

6 UPFLOW from 80,000 to 185,000 Btu input

5 COUNTERFLOW from 80,000 to 160,000 Btu input

FAST FACTS: All models with alloy steel burners, precision formed to provide equalized gas pressures for higher efficiency . . . scientifically designed heat exchangers with high conductivity that prevents scaling temperatures . . . automatic pilots with an adjustable flame positioned for prompt ignition . . . blowers dynamically balanced for vibration-free performance . . . standard equipment that includes thermostat and all conventional controls. A.G.A. and C.G.A. approval.

LOOK! 19 NEW CARRIER OIL-FIRED FURNACES



4 UPFLOW from 85,000 to 125,000 Btu output

3 COUNTERFLOW from 85,000 to 125,000 Btu output

7 HORIZONTAL from 85,000 to 335,000 Btu output

5 LOBOY from 100,000 to 250,000 Btu output

FAST FACTS: Belt-driven models in all capacities plus a special direct-drive 85,000 Btu builder model . . . with oversize blowers for add-on cooling . . . completely enclosed vestibules . . . heat exchangers of 14-gauge steel electrically welded and leakproof . . . fan motors rubber mounted for quiet operation and with built-in thermal overload protection . . . fans dynamically balanced for vibration-free performance . . . standard equipment that includes thermostat and all conventional controls. U.L. approval.

Japan--

(Continued from preceding page)

Tubing of Detroit) is Usui Kokusai Sangyo Kabushiki Kaisha, of which Apira Usui is the president.

Chief engineer Masayoshi Sakai of this long-winded-mouthful-name company spent several months in Detroit learning modern manufacturing techniques.

To the Bundy fraternity he is known as "Massy," for short.

Bundy's personable Jack Anderson states that he is "astounded" by the rapid growth of the Nipponese market for Bundy tubing.

As is the custom in Japan, this product is sold through a separate trading company. Bundy's sales agency is Kyokuto Boeki Kaisha (note to linotype operators and proofreaders: please don't go out on strike) of which M. Kato is the sales manager.

An extra billion-dollar-a-year market for American goods and services, piled atop a billion-dollar-a-year market which already exists, represents Japan's opportunity for American manufacturers and traders.

That's the additional sales quota which the U. S. A. reasonably can expect to export to Japan within the next decade—as a consequence of continued Nipponese economic expansion.

In terms of business, this other-side-of-the-Pacific archipelago is growing fantastically. Ever since the end of World War Two spectacular economic progress has occurred here annually.

In the early post-war years fortuitous circumstances contributed to Japan's growth. Future expectations are more solidly based.

This premise stems from a financially sound internal economy, an industrious labor force, and a government policy of expansion which makes maximum use of the entrepreneurial skills of Japan's private enterprise system.

Obviously Japan must increase her exports in order to maintain this rate of economic growth, because her economy is based on the use of raw materials which she cannot produce in adequate quantity, and on extensive employment of capital equipment supplied from abroad.

Need for imported (and refrigerated) food surely will increase—not only alongside a modest rise in population—but also in response to higher family incomes.

Nipponese imports will need to increase at the rate of 5.6% a year, experts predict.

If the present trend continues, imports of goods and services in 1970 will amount to $7.3 billion.

East Meets West

HOBART C. RAMSEY, left, chairman of Worthington Corp., greets Oriental customers.

This will be $3.8 billion above the 1956 level, and $3.4 billion above such imports in 1959.

Various categories of imports won't all increase at the same rate, of course. Rising requirements will be headed by mineral fuels, electrical equipment, and steel.

Finished products — mostly capital goods and specialties like air conditioning—are next on the list of expanding import necessities.

In 1961, Japan has displaced the United Kingdom as the world's second-best customer for United States merchandise. (First place, Canada, still.)

Furthermore, the United States hulks especially large as a supplier when seen from the Japanese side.

During recent years imports from the United States have averaged better than one-third of its imports from *all* countries.

In the 1940's, well over half of American exports to Japan were agricultural commodities. The proportion in recent years has been closer to one-fourth. Fabricated goods have risen rapidly in relative importance to bridge this gap.

With one hand tied behind its back, the United States has maintained its share of the Japanese market by keeping in step with the changing nature of Japanese requirements.

But we really haven't begun to *sell.* They've *bought.*

U. S. Sales To Japan Could Hit $2 Billion Annually by 1970

Interesting question for the future is whether or not American exporters will continue to meet changing Japanese needs.

If they do, sales registered each year by our nation to Japan could amount to more than two billion dollars annually by 1970.

To be sure, the United States *automatically* will not retain its one-third share of the expanding Japanese market.

Competition will be keen, not only with European suppliers of manufactured goods, but also with food and raw materials from South America.

We'll have to *sell* them on our reliability, and the superiority of our engineering.

Nevertheless, the picture is made bright for the United States by the fact that Japanese demand will increase most in those commodity groups wherein our American export position probably will be strongest.

Air Conditioning Imports Should Almost Triple by 1970

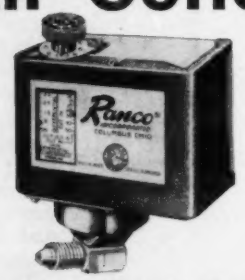
Informed predictions by Tokyo economists as to Japanese imports of air conditioning machinery and capital goods reveal that they should almost triple by 1970.

Furthermore, our suppliers are in a favored position because of the marked Japanese preference for American-made items.

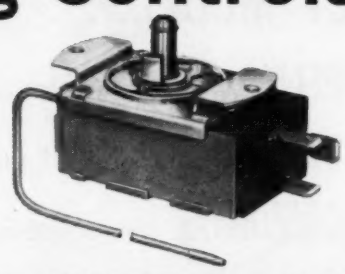
Our sales of primary foodstuffs to Japan averaged $175 million in 1956-59. By 1970, they should be $100 million higher.

Chief items in this category are wheat and soybeans. American farmers are the principal

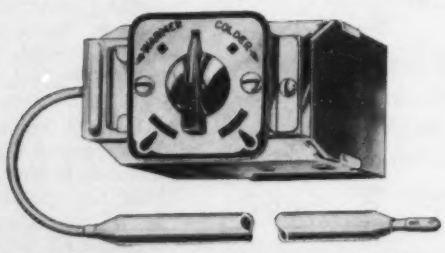
Ranco Refrigeration, Air Conditioning Controls



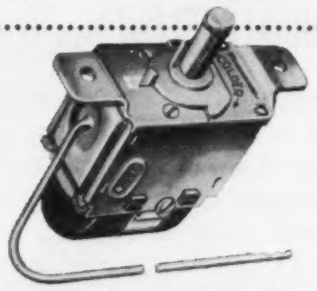
"O" Type Commercial Refrigeration Controls, in Single or Dual Types adaptable to temperature or pressure operation; automatic cycle or manual reset. Single pole, single throw or single pole, double throw switches with front access terminals. Temperature range adjustment: —37°F to 110°F. Adjustable differential: 5° to 20°. Pressure range adjustment: 20 in. vac. to 450 psi. Adjustable differential: 5 to 25 psi and 30 to 100 psi.



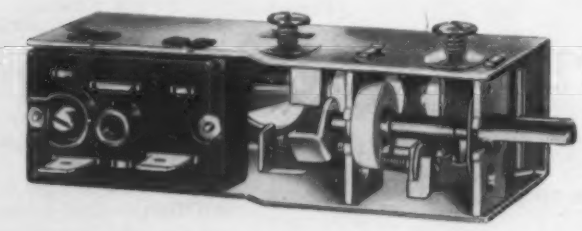
"A40" Type THIN MODEL Refrigeration Cycling Controls for domestic refrigerators, freezers, etc. requiring extra wide differentials and side access type terminals. The SPST, snap-acting toggle switch opens on decrease in temperature. The operating limits between —24°F to 71°F can be provided, but not within one control. A40-2000 series features 8° to 32°F differential and A40-4000 series features 32° to 66°F differential.



"C17" Air Conditioning Control for automatic changeover on heat pumps or two-stage cooling or heating operation that features two electrically separate switches operated by one temperature-sensitive power element. Liquid filled power element controls from the bulb. Switches are single pole, double throw with quick-connect type terminals.



"A10" Type Refrigeration Controls for use on household refrigerators, freezers, beverage coolers, water coolers, window air conditioners, etc. Single pole, single throw switch. 15° to 35° dial range from —37°F to 95°F. Differential: 5° to 24°.



"J11" Humidistat for air conditioning systems responds to the atmospheric moisture content to automatically cycle humidifying or dehumidifying equipment. It operates within 20-80% humidity range, has a positive "ON" and "OFF" position, a snap-acting switch and long lasting power element.

"V25/26" Instant Reversing Solenoid Valves for unit air conditioning heat pump systems to reverse the flow of refrigerant for either cooling or heating or both without an "OFF" period. Capacity of V25 is 2½ through 7½ tons; of V26 is 1 through 2 tons using Refrigerant 22.

Ranco also manufactures motor relays, de-icing controls, clothes dryer controls, automatic defrost controls, sequence controls and automobile water heater modulating valves. Write to the Export Department for information on all products.

RANCO CONTROLS

Ranco® INCORPORATED
COLUMBUS 1, OHIO

suppliers of both—nearly half of the wheat and over three-quarters of the soybeans consumed in Nippon during the last four years.

Wheat sales are expected to rise moderately (to about $80 million a year by 1970 as compared with a 1956-59 average of $67 million).

However, soybean sales should continue their marked upward trend (from $51 million in 1956 to $87 million in 1959) and easily reach $125 million by 1970.

Supporting items include supplementary grains and dairy products. They, too, should share in the general increase in imports of goods. And man, have we got wheat, grains, and dairy products!

To Japan we don't give them away—for a change. They buy.

Other important agricultural imports include cotton, hides and skins, beef tallow, and tobacco. Cotton, of course, is dominant; our average annual sales in this group to Japan in 1956-59 were $225 million, and cotton accounted for $159 million of this total.

American sales of "services" to Japan averaged $275 million in 1956-59. By 1970, they should nearly double, to $520 million.

A big item in this category is ocean freight, which undoubtedly will rise alongside the increased tonnage of Japanese imports—in spite of strenuous Japanese efforts to expand their own merchant fleet.

Among these important "services" are substantial Japanese payments for American business management, industrial know-how, and investment counsel.

In 1956 payments of fees and royalties amounted to only $12 million; by 1959 they had risen to $29 million.

During the same years, payments to American investors leaped from $19 million to $37 million. Preceding statistics dramatize the fruits of existing American participation in the Japanese economy. Our future harvest should be much larger.

The full catalogue of Japanese purchases from the United States is extensive. Not all of these purchases will rise. Heavy fuel oil and refined chemicals may decline, for example. There will be a tendency to substitute iron ore for imported pit iron and scrap.

But the relative curtailment of some markets will be offset by new sales possibilities for other products which the United States can offer.

This delightful prospect for American exporters is made even more pleasing by the fact that Japan's improved foreign exchange reserve position has permitted a relaxation of import control measures.

Procedure for obtaining foreign exchange also has been liberalized. Thus it is becoming progressively easier for the American exporter to sell in Japan.

You can bank on it that America's best Pacific customer is going to be a much better one. Continued economic growth in Japan will mean more export sales for America's farms, factories, and mines.

Nothing short of The Last World War can stop it. Banzai!

'Solving Foreign Business Problems' Covers 100 Cases

NEW YORK CITY — How more than 100 leading companies have overcome a variety of problems in earning overseas profits is reported in Business International's 1961 edition of "Solving Foreign Business Problems," the firm announced.

"Case histories, reprinted from the issues of Business International, show how firms actually have solved many common difficulties in trade and investment to greatly increase their international volume and net profits—in many cases realizing more profit per sales dollar or per dollar invested abroad than at home.

The 130-page report may be obtained from Business International, 200 Park Ave. South, New York 3, N. Y. The price is $30; but one copy is free to each subscriber to the Business International weekly report.

Asia Needs Conditioning, Tourism Directors Say

NEW DELHI—Tourism directors from 16 nations in Asia met here recently to confab on how to recruit more tourist dollars for their needy areas.

On two recommendations all representatives agreed:

(1) They should air condition more hotels, restaurants, and airport lounges.

(2) Provide air-conditioned buses, limousines, and taxis for sight-seeing.

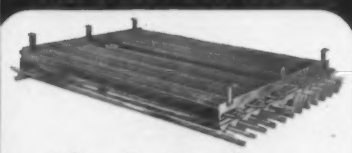
Acme-National Plans Compact Refrigerator Sales In Japan

ASTORIA, N. Y.—Acme-National Refrigeration Co., Inc., has launched a program to sell compact refrigerators "in the most competitive market in the world—Japan" through its distributor Suita Trading Corp.

The company "had been wringing its hands about the inroads of overseas competition in the small refrigerator field," according to Sidney Speilman, president.

However, he reveals, "the company successfully grappled with the problem, and after negotiating with labor and management, realized that although foreign labor was cheaper, the American manufacturer possessed certain technological advantages which more than offset the low labor costs."

Buy Peerless
FOR PERFORMANCE



Flash Coolers
Fin Coils
Flash Pans

The Peerless Line of quality products is designed and constructed to meet every demand of modern commercial refrigeration. Our Flash Coolers, Fin Coils and Flash Cooler Pans have proved their superiority in performance under widely varying operating conditions. They are built with an eye to appearance, economy of space, and the utmost convenience in installation and servicing. Louvers fabricated from polished aluminum. Made in a wide variety of standardized sizes and styles—all of unchallenged Peerless quality.

Write for Catalog 161

Peerless of America, Inc.
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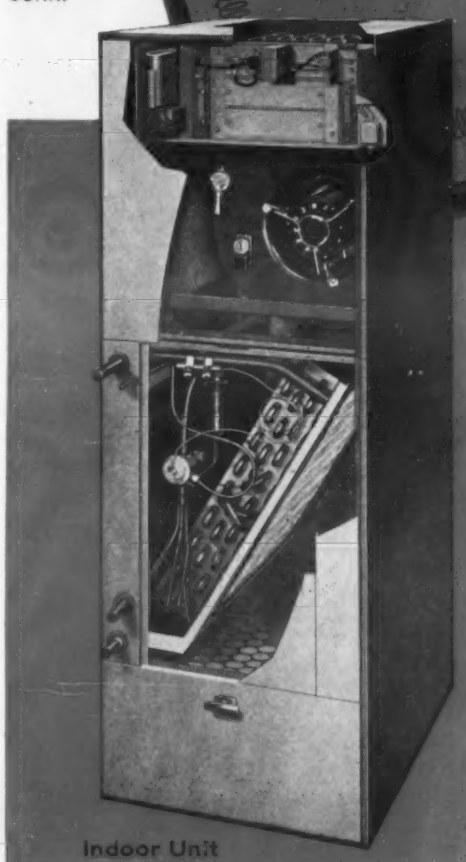
Newest in electric heating and cooling

America's First Bonded Heat Pump

BOND ISSUED BY TRAVELERS INDEMNITY CO. HARTFORD, CONN.

Outdoor Unit



Indoor Unit

Engineered with Precision in the Coleman Tradition

Now, Coleman takes the proved principle of air-to-air heating and cooling and expresses it in a compact, all-electric Heat Pump. COOLS in summer. HEATS in winter. In all seasons it assures maximum performance and economy... using only electricity and air.

Twin components are pre-engineered for simple, low-cost installation. Indoor unit is "multi-positional"—fits any type of air delivery system.

It's America's most advanced, most dependable Heat Pump! And as a sales clincher, you have the Coleman warranty bond—the industry's ONLY bond-backed guarantee. Ask your Coleman distributor or write—

The Coleman Company, Inc. / Wichita 1, Kansas

Coleman builds the most complete and only bonded line of heating and air conditioning. Investigate!

Engineers from All Parts of World To Participate

European Heating, Ventilating, Air Conditioning Exhibition, Conference Set for London Sept. 26 to Oct. 6

By F. C. Livingstone

LONDON, England—Leading heating, ventilating, and air conditioning engineers in all parts of the world have been invited to take part in an international conference here Sept. 26 through Oct. 6, 1961.

This conference is to be held in association with the Heating, Ventilating and Air-Conditioning Exhibition, which is said to be the first major European exhibition specializing in these subjects.

The conference will cover three main themes, although delegates are invited to submit papers on any relevant topics. The main themes will be: (a) administrative advances, including training, education, labor relations, research and contract planning; (b) technical advances to be expected in the next 10 years, especially in the design of installations for hospitals and office buildings; and (c) the integrated design of architectural and engineering services for economizing in building construction.

With both the conference and the exhibition in the same vast building—Empire Hall at London's Olympia — visitors will have the unique opportunity of comparing theoretical ideas with the actual equipment now in production for world markets.

The HEVAC exhibition will present an opportunity for leading manufacturers from many overseas countries to display under one roof the products of their rapidly-growing industry, so vital both to constructional industries in general, and to all manufacturing processes.

All aspects of heating, ventilating, and air conditioning will be covered, including industrial air handling and treatment equipment, dust and fume collection, process heating and cooling.

To make the exhibition and conference even more thorough in the coverage of various aspects of the British industry, the organizers are arranging a program of visits of technical interest for overseas visitors. These will include trips to a number of factories in various parts of Britain, and to outstanding installations which recently have been completed.

One of the most important features of the exhibition will be a Technical Information stand, staffed by members of the Institution of Ventilating Engineers, and by the staff of the Heating and Ventilating Research Association.

They will be prepared to tackle any technical problems put to them by visitors to the exhibition and conference.

The normal conference language will be English, but translation facilities for other languages will be provided where there is sufficient demand.

Interpreters will be provided in the exhibition hall to help visitors on their tours of the stands, and it is expected that similar arrangements will be made, when required, during visits to factories and other installations.

Exhibits will show the tremendous advances made in recent years in equipment for hospitals, precision industry plants (where the need for completely filtered air is often greater than that in medical centres), and other specialized situations.

Displays of this nature, coupled with the papers to be read in the conference, will go far towards coordinating all sections of the heating, ventilating, and air conditioning industry in all countries to meet the ever-increasing and exacting demands of modern life.

All the space in the HEVAC exhibition had been let early in 1961, which is taken as a definite sign that the informed and specialist international audience of engineers, consultants, architects, contractors, and so on, who will visit it will have a unique opportunity to become fully informed of the newest developments in all sections of this expanding industry.

L. J. Wing Establishes Canadian Headquarters

LINDEN, N. J. — Headquarters for its Canadian manufacturing, sales, and service operations have been established at 176 Windsor St., Montreal, by the L. J. Wing Mfg. Co., here.

Wing, a division of Aero-Flow Dynamics, Inc., manufactures industrial and commercial steam and gas-fired heaters, ventilating equipment, air-conditioning system components, marine ventilating equipment, and forced and induced draft fans.

Canadian manufacturing facilities are in Montreal. Canadian sales and service representation, which now includes offices in nine major Canadian cities, is being expanded.

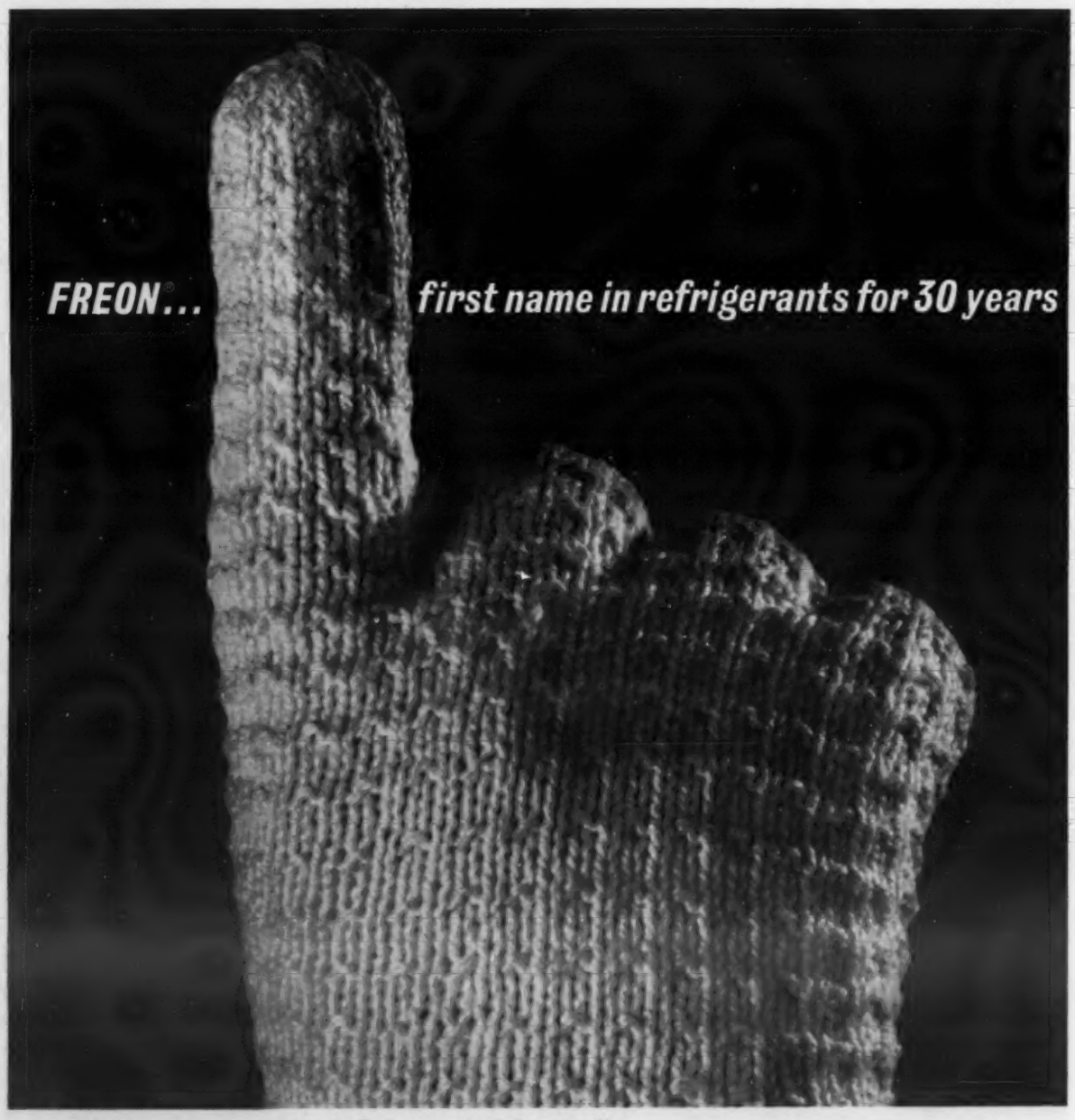
Manager of Canadian Operations, now located in the new Montreal office, is Fred R. Schulz. Shulz was an engineering consultant to Wing before joining the company as chief engineer in 1952. He had charge of marine ventilation sales for Wing before becoming manager of Canadian Operations.

Admiral Refrigerator Produced In Damascus Shown at Chicago Fair

CHICAGO—Among the products exhibited at the Chicago International Trade Fair was an Admiral-El Hafez refrigerator produced in Damascus, Syria, with many parts and components originally shipped some 7,000 miles from Chicago to the Middle East.

Assembled by M. Said Hafez & Son, a licensee of Admiral International Corp., the electric refrigerator was transported another 7,000 miles to be shown in the United Arab Republic's display at the Trade Fair.

The refrigerator will have covered 21,000 miles by the time it is returned to Damascus.



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Freon* fluorocarbon refrigerants were introduced by Du Pont in 1931 and have been the standard of quality for refrigerants ever since. You can always rely on "Freon" refrigerants because they're laboratory-tested and factory-sealed in golden-capped containers to insure their uniformity. They're as dry as refrigerants can be made . . . containing less than 10 parts of moisture per million parts of "Freon"!

You can obtain "Freon" refrigerants everywhere in the free world . . . easily and quickly . . . in cylinders that meet all requirements. Du Pont supplies technical help, in addition to products of the highest quality. See your Du Pont distributor, or send coupon at right for "Service Pointers" on servicing refrigeration systems.

*Du Pont's registered trademark for its fluorocarbon refrigerants.

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Please send free copy of 60-page manual on "Service Pointers".

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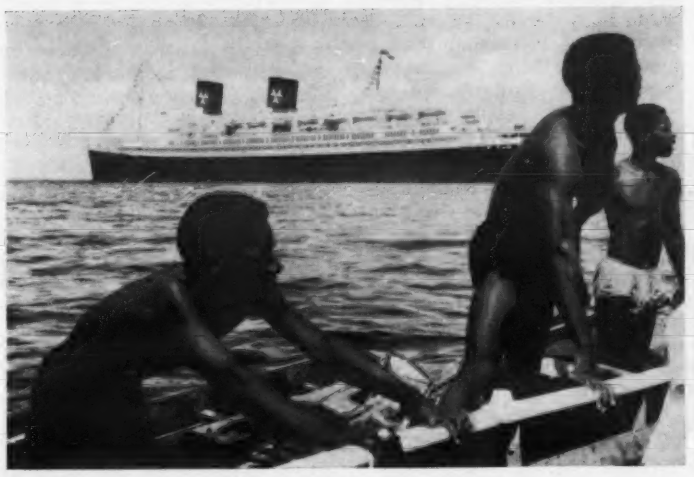
Marketing: Haiti to Hong Kong

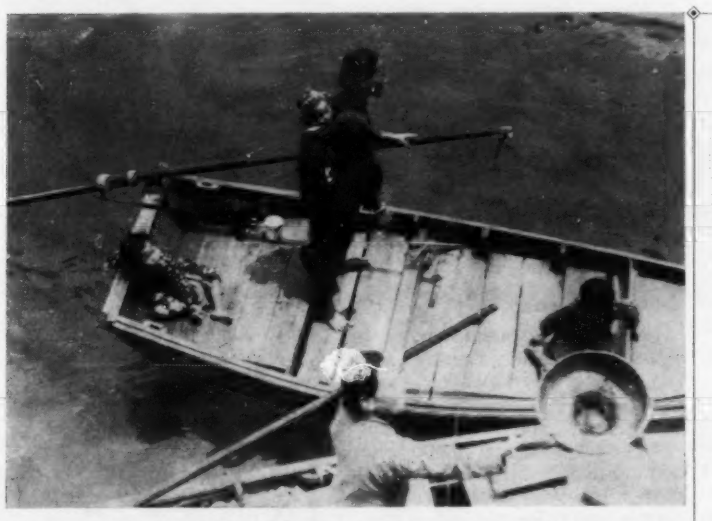
Candid Corner



These Caribbean peddlers row out to meet incoming ships. They sell souvenirs.

To market with produce come Haitian truck farmers.

Sonny minds the store in Kingston, Jamaica.

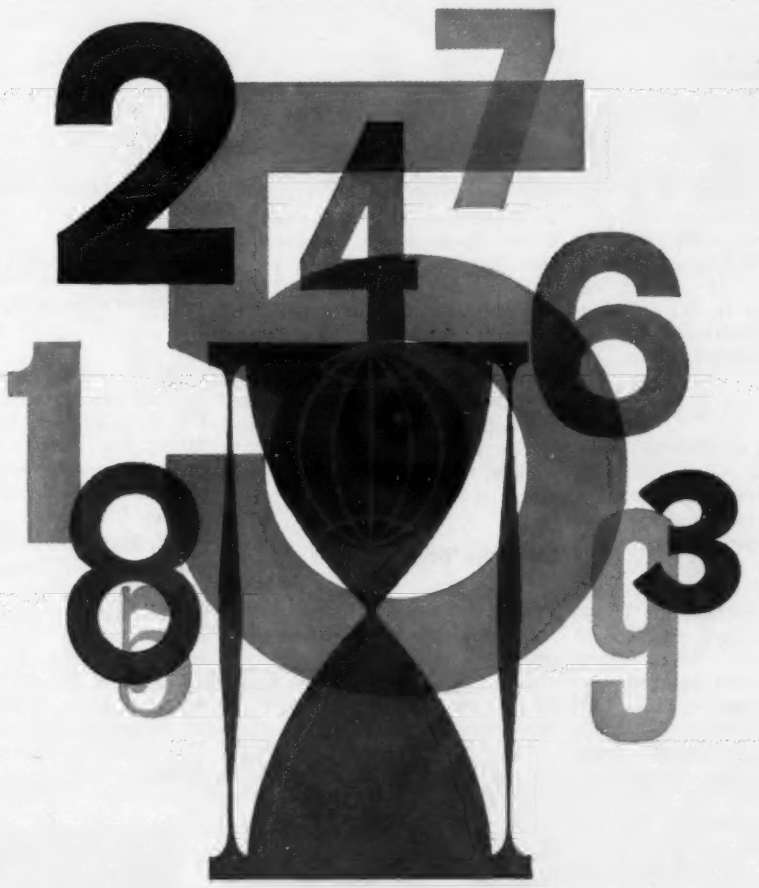


They'll sell you fish right out of the water in Hong Kong.

Haitian shopper starts home with a bundle.

Meals cooked to order aboard this floating chow palace in Hong Kong.

Private enterprise. Chinese kids beg for coins.



Everywhere in the world of air conditioning

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Air conditioning began with the name Carrier. And for more than a half century, most of the important advances in this field have been made by Carrier research. The priceless years of experience that stand behind the first name in air conditioning are an assurance of quality and long-lasting dependability of Carrier products.

For many reasons, a Carrier association is the most sought after in the industry. Carrier shares with its distribution organization the latest techniques in engineering, installing and servicing.

In addition, Carrier backs its world-wide organization with strong international advertising support and co-operative promotional assistance.

For any air conditioning or refrigeration need Carrier distributors and dealers are best equipped. Not only do they handle the widest range of products in the industry, but they are supported by the organizational experience of the first name in air conditioning. For full information, contact your local Carrier representative or address inquiries to:

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Carrier

EUROPEAN SUPERMARKETS

Supermarkets, Frozen Foods on Top as Europe Satisfies Its Yen for American Way of Life, Suburban-Style

By George F. Taubeneck

BONN, W. Germany—Riding on the heels of continental Europe's desire to become a Third Force in the World (its nations welded economically and politically) is an unmistakable trend toward American-style commercialization and living standards.

Coca Cola, chewing gum, chocolate bars, nylon stockings, and jazz were the first cracks in traditional European armor. Our occupational soldiers introduced these extraneous factors.

Now, look at what's invading European "culture":

1. Supermarkets.
2. Frozen foods.
3. Air conditioning, even home heating!
4. Bowling and cookouts and TV horror tapes.
5. A yen for the "American way of life," suburban-style.

All of which are the best possible indicators that Khrushchev and his bureaucratically-hamstrung crowd won't bury us. They may even join us, too!

European adoption of the supermarket idea is a primary case in point. It caught on slowly here, as it did in England; but the Mediterranean nations roller-coasted into its maw.

Israel

Two citizens of Detroit, Herbert Hordes and Allan Feinberg, bravely pioneered this concept on the rim of the Mediterranean Sea. They opened the first supermarket is Israel.

Riots followed. Small shopkeepers were incensed. Those who came to jeer stayed to cheer, however, when they calmed down and studied the prices and volume.

Customers bought so much that the Detroit-origin company, Supersol, has opened two more stores and is planning to open three more later this year.

Each of Supersol's supermarkets serves an average of 8,000 to 9,000 customers a week, even though most Israelis are short on cash. (The average corner grocer gives credit while Supersol does not.)

Prior to these supermarkets, flour, rice, sugar, spices, even delicacies, were scooped from bins and weighed for each customer. Now they're pre-packaged, and bagged — instead of being wrapped in unsanitary old newspapers.

Born and educated in Detroit, pioneer Hordes was graduated from Wayne State University in 1951 with a Phi Beta Kappa key.

Together with boyhood pal Allan Feinberg he enlisted the support of such Detroit supermarket operators as Tom and Al Borman (Food Fair Markets) and the late Nathan Lurie of ACF-Wrigley Stores, to underwrite their risky venture in Israel.

Back in the Holy Land, Hordes and Feinberg had to negotiate with city officials for store licenses, and with food processors who refused to supply them because their supermarkets proposed to sell at cut prices. But they made out!

Now, what's the supermarket story in other progressive countries?

La Belle France

Let's start with La Belle France.

French supermarket firms are growing astonishingly in this nation of traditionally small shops and every-day buying "at the stalls" by housewives.

Prior to the advent of supermarkets, a Frenchwoman would visit at least 10 shops on her daily round of food-gathering for her family. It didn't take long for this centuries-old habit to disappear. Now there's more time for l'amour, la-la.

France's Prisunic chain of 300 food stores plans to convert them into supermarkets at the rate of one a month. Those already in operation in Paris, Lyons, and Marseilles are astoundingly successful.

Societe Francaise de Supermarches recently opened its eighth and largest unit at Chatenay-Malabry, a growing suburban community south of Paris.

Romantic Italy

In romantic Italy the cost of food distribution, based on tired old methods of delivery (and a licensing arrangement which lists 25 limited categories of stores) is far out-of-line with reality.

An average Italian family must budget 40% of its income for spaghetti, fettucini, and other starches. No wonder the Papa of Nine welcomes the supermarkets which save him 10% to 15% on his grocery bill!

Mama loves them, too. She used to pant around to one store for milk, another for bread, another for coffee, another for salt, another for cold meats, another for beef, another for lamb.

Dolce far niente.

Mr. and Mrs. Italiano also appreciate the honest weights, sanitary wrapping paper, uniform quality and (of course) lower prices for everything which the "supers" offer.

However, small shopkeepers in Italy haven't been eclipsed. They provide personal service, telephone and home delivery service, and charge account facilities to their good neighbors.

A village Italian grocer may be unable to keep books, or even add up a bill correctly. But his shop is a family affair. His plump wife is cashier, and his handsome children wait on trade and deliver. Italians are wondrous family people, and they like to do business with family enterprises.

Moreover, his family may live in a room upstairs—thus saving rent and overhead as well as labor costs. How, then, can a supermarket compete?

Thanks to a law passed in 1938, anyone who wishes to open a store in Italy must post his request at the Chamber of Commerce for 30 days. The local prefect may grant a license at the end of that time if he sees fit, but he is obliged to listen to any protest against it.

In contrast, a "big business" supermarket must apply for 25 separate licenses, all of which must be approved by a myriad of bureaucrats, before any SM can open.

If the prefect turns down a license, the interested party may appeal to the Minister of Commerce and Industry in Rome, who is the final authority. Repeatedly this gentleman publicly has approved supermarkets as a public service — which reasoning obliges him to grant such licenses.

Olde England

OK. So what's happening in conservative Olde England? Of the nearly 150,000 food stores which the Board of Trade lists as "grocery and provision merchants," less than 10,000 offer self-service facilities presently.

Nevertheless, British food retailers and their customers obviously have become more supermarket-minded recently. Help-yourself groceterias have been originating at the rate of a hundred a month in Jolly Olde England in this Year of Our Lord.

Such "help-yourselfer" emporiums arise chiefly in downtown locations, inasmuch as suburban shopping centers aren't erupting here yet. Few new supermarkets provide adequate parking facilities, because British streets are so narrow, and its built-up real estate so valuable.

Even so, Mrs. Suffolk-Downs is beginning to become more independent. Supermarket shopping, to her, is a means toward achieving that worthy goal — because they conserve her time and energies.

Belgium

In Belgium, Delhaize and GB have put more than a dozen supermarkets into operation throughout that country during the last three years.

Profitability has been promising enough to warrant the opening of another dozen during 1961 and 1962.

Presently, Delhaize has four stores in Brussels, one in Liege and one in Antwerp; while GB has two in Brussels, four in Antwerp, one in Ghent and one in Bruges. Additional supermarkets are scheduled for Brus-

why store all these algae products...

when 1 controls all algae problems?

Save storage space and capital investment with Solvex Special Algae Control . . . . the **one** product that works every time. No need to rotate chemicals. Does not contain damaging chlorines or copper derivatives. Available in handy-to-use tablet form or in economical granular form. May be used as an algae preventative . . . . or to "shock clean" fouled systems. Insist on Solvex Special Algae Control . . . . another quality Solvex product. Ask your wholesaler.

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...no frost...no icicles at Miller Packing Company

This reproduction made from an unretouched photograph supplied by George F. Miller, owner, is visible proof of frost and icicle-free refrigeration.

"The excellent performance record of Krack units used in the original building was one of the major reasons for selecting more Krack units when our new storage room was added" *says George F. Miller.*

The BUC-ED low temperature units maintain temperature and humidity at a constant level to keep meat, poultry and frozen foods at peak freshness.

NEAT-AS-A-PIN REFRIGERATION

with Krack Automatic Electric Defrost Units

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sels, Antwerp and Ghent.

Approximately 200 self-service food stores operate in Belgium, in total. Nearly all of these are neighborhood units which depend on large distributors for their supplies and advertising - merchandise - promotion.

In the Netherlands, GB supermarkets (a subsidiary of the Antwerp department store Grand Bazaar) are operated in cahoots with the Jewel Tea Co. of Chicago.

Feature Pastry Bakery

Remarkable feature of these supermarkets is a pastry bakery in each store operated in full view of its customers. Hollanders dote on fresh pastries, and everybody loves to watch their making.

New developments in Europe also include shopping centers, American-style. Two such will open in September in Brussels. They both will have about 100,000 square feet of selling space located inside a 300,000 square foot area.

These super-shopping centers will include barber and beauty shops, discount houses, banking facilities, flower stores, and pharmacies.

West Germany

Back to West Germany. Supermarkets across this urgent country are still in their infancy. Nevertheless, the number of Bonn-type supermarkets rose from none in 1957 to 250 by the end of 1960. They are mainly concentrated in large cities and industrial areas.

German food retailers generally are in favor of supermarket operations, inasmuch as the chronic labor shortage hits them where it hurts. Self-service stores obviously will help to solve this ever-growing problem.

Hausfraus gradually are succumbing to the idea of self-service, but for most of them the problem is being able to find one.

Supermarkets in Germany are fairly equally divided between chains, such as Deutsche Supermarket GmbH of Munich (German subsidiary of George Weston, Ltd.), and Schmidt AG of Hamburg, plus individually-owned stores.

Switzerland

In gorgeous Switzerland the number of supermarkets has risen from two in 1952 to 40 at present. Of these, 27 belong to Migros, and 13 to members of the Union of Swiss Consumer Cooperatives, VSK.

Every supermarket in Europe, as in America, can be described as a "giant refrigerator." And some of them already are air conditioned.

Supermarkets Spreading Rapidly In Europe —And Some Are Real Big Stores

CHICAGO—"In Sweden there were two self-service stores in 1947, and now such stores there number into the thousands. In Great Britain there were no supermarkets in 1955, and today there are 500."

So stated a western European observer to press representatives here, in a report published during International Trade Fair Week in Chicago—discussing a subject which used to be somewhat controversial and now is becoming more of a fact—the "Americanization" of the European way of life.

"It used to be symbols and frills—jazz, Hollywood, Coca-Cola. Now it's real—supermarkets and motels, corporate mergers and soaring suburban land values, impossible traffic jams and declining consumption of bread, instalment buying and discount houses, TV and frozen foods," declared this observer.

This viewpoint, particularly with reference to food supermarkets, was backed up by top executives of manufacturers of commercial refrigerators, in some comments on supermarket growth in Europe, made during meetings of the Commercial Refrigerator Manufacturers Association here last month.

"The myth that Europeans wouldn't travel any distance to shop has been shown to be almost completely without foundation," declared Robert L. Tyler, Sr., president of Tyler Refrigeration Corp. Tyler has been a frequent visitor to Europe in the past few years, and his company has a plant in Germany.

"I also get the feeling, in discussing this matter in the U.S., that many people here think that the European supermarket is not on a scale comparable with those in the U.S.," Tyler commented. "I'd like to report that the recent billing on a sale of equipment for a single supermarket from our plant in Germany was in excess of $50,000."

In France, which apparently has lagged somewhat behind other European countries in taking to supermarket shopping, interest is picking up.

"Two new supermarkets which have opened in a suburb of Paris are reportedly doing extremely well," declared J. W. Krall, president, McCray Refrigerator Co., Inc., which has licensees in several European countries building commercial refrigerators of its design.

Paris Makes Bid for Trade Conventions

PARIS—The Paris Chamber of Commerce has kicked off a drive to make the "City of Light" a world center of industrial, trade, and technical conventions for industries ranging from plastics and machine tool firms to boat makers.

Under the new plan, says the French Government Tourist Office, two weeks during the month of May each year will be designated the "Quinzaine Technique de Paris," or Technical and Industrial Fortnight of Paris. The first "Quinzaine Technique" has been scheduled for May, 1962.

In addition to the regular rounds of business meetings and professional exhibits, convention goers at the Quinzaine will be treated to sightseeing trips, special theatre and concert performances, fashion shows, etc.

Thinking of—

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- **expanding your territory**
- **taking on new lines—**

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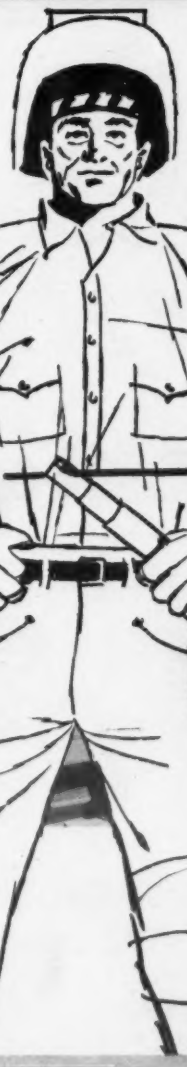

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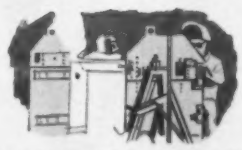

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U.S.A. — Niles, Michigan. Cable address: TYFIX. **CANADA** — Tyler Equipment Sales Ltd., 732 Spadina Ave., Toronto, Ont. **WEST GERMANY** — Tyler Refrigeration International, GmbH, Schwelm/Westfalen. **FRANCE** — Etablissements Bonnet, Division Bonnet-Tyler, 9 rue Grenette, Villefranche (Rhone). **AUSTRALIA**—Frigrite, Ltd., Graham St., West, Port Melbourne, Victoria.

ONE WORLD

A Marketing Reality for American Businessmen Who Must Find Answers to Creative Competition

By Chris J. Witting, Vice President
Westinghouse Electric Corp.

PITTSBURGH—Let's look at the impact our shrinking world is having on the question of whether we, as a business community, are marketing effectively.

Our world, with its distances now measured in terms of hours, is growing smaller. Even if we haven't gone abroad lately, we're aware of this when we read such airline advertisements as "9½ hours to Rio, 12 hours to Berlin, 15 hours to Tokyo."

We become even more aware of this by the increasing impact world news has on our prestige, our economy, and even on our individual sense of well-being. In fact, it sometimes seems that news from abroad far outweighs the importance of the news about home.

And when the impending world-wide television network, already partially in existence from Moscow to London and from Naples to Leningrad includes this country and South America, the more highly cultured parts of the earth will become an integrated community —a market place for the world's goods and services.

This situation — which I believe will be with us in the next 10 years—probably sounds as remote as a Common Market in Europe must have sounded 10 years ago.

Not so long ago our industrial technology and complementary inventive genius allowed us to set the prices of our products abroad. Today, our neighbors have learned their lessons, and the price structure of any product is determined by the country in the Free World which can produce that product more efficiently and hence more economically.

The reality of this competition is that in many parts of the world automation and newer, more efficient plants can outproduce us at lower costs per unit, even without considering the disparity in labor rates.

Foreign Production Ffficient As Well As Low Cost

The reason for this is simply that in this country about 80% of our factory machinery is pre-1946, while in Western Germany and Japan, 87% of the machinery is post-war and consequently much more efficient.

Products of foreign design and manufacture are arriving on our shores with qualities of reliability and performance which offer formidable competition to our own, in some areas.

And what hurts most is that they are being offered for sale at prices which at times are even lower than our production costs. Faced with this kind of battle, we've abdicated our marketing responsibilities and given up market share and substituted increased alibi penetration.

We're left with some dubious marketing children, resulting primarily from the mating of complacency and ego. We are confronted by a major attack on our vaunted abilities to make and sell goods.

To meet this attack head-on, and to throw it back, will demand creative marketing thinking and planning far beyond what we've done over the past two decades.

Were the days before World War II, when an American depression rocked the world, normal? Did we become marketing geniuses after the war when having something to sell was just about as profitable as going public is today?

Was our marketing reputation saved by the normalcy of Korea? And, after that, was the normalcy of chopping prices the way to look good for a while? Now, it may be different.

Our reputation for mass production at low cost was well deserved because we made a serious business of production with dedicated engineers and production people who did a superb job in furthering automation, bettering manufacturing techniques and product standardization.

And in the process they served our people well. But the sad fact is we're no longer top dog in low-cost production.

As we continue our look at the shrinking world, we see more gauntlets being thrown at us.

Let's sum up the situation right now: West Germany, Japan, Italy, England, and other free countries, were wastelands 15 years ago.

Today, with the help of our know-how, financial aid and guidance, they are economic competitors—not only in their own homes, but in ours.

Products Are Creative, Quality Conscious

The merchandise they produce is creative, quality conscious and low priced. We must find the marketing answers to this competition—that is our responsibility.

The artificial barriers we try to erect—such as protective tariffs—historically have been solutions of the moment, having no real relationship to the long-term resolutions we must reach. There is no question but that the outside world must — and will sell to us. Otherwise, we will not sell to them.

And if we don't let others sell in our market, there are other markets in the world which, like the spider and the fly, will be happy to invite them in on a silken web woven out of the Iron Curtain. In short:

If we don't learn to market competitively in the world market, we will ultimately lose our own markets at home.

Just as we must expand the meaning of "effective marketing," we must widen the meaning of "coordination." It reminds me of the story that's told about Benny Goodman when that remarkable musical marketer was in Thailand on a State Department tour.

The Thai King—an amateur musician—dropped all other affairs and spent most of his time playing clarinet along with Goodman and his band. When Goodman was asked how the King played, he paused for a moment, and then diplomatically replied: "He's a fine clarinetist—for a King."

Top management too often says, "He's a fine executive—for an export marketing man." How do you change that traditional top management picture of sales-to-be-gained?

To do it you must think beyond the limits of your assigned box in the corporate organization chart and beyond the limits of traditional markets.

The need of effective coordination with management looms large. Here's where we'll have to assume a more dynamic leadership. We'll have to sell management on the idea that effective marketing coordination today and in the days to follow demands an expansion of marketing thinking to global dimensions.

Do you realize that with 300,000 American manufacturers, only 12,000—less than 5%—sell abroad? What an opportunity for global marketing thinking!

Of this I am convinced: If marketers recognize this enlarged responsibility and put their energies, capabilities and trained minds to work on solving the problems that world competition is giving them today in all markets, the future for American business will be brighter.

What Is Effective Marketing?

And if management realizes that marketing must take the lead within the company, if that company is to carry out its profit obligation successfully—you can be sure marketing will receive the leadership it rightfully deserves. But it must be earned. And it must be earned through recognition of the new definition of "Effective Marketing."

First, to market effectively at home we must compete with products that are being im-

THE QUALITY LEADER IN CONDITIONING AIR

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ROOM AIR CONDITIONERS

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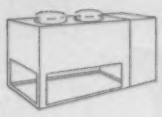
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Self Contained Package Air Conditioners and Heat Pumps in 2, 3, 4, and 5 H.P. with matching Electric Duct Heaters. You'll like the merchandising program designed to help you sell.

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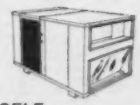
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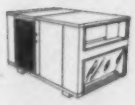
REMOTE HEAT PUMPS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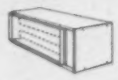
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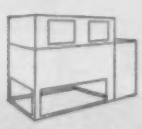
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Distributors, dealers, investors franchised territories available. For the first time an automatic ice vendor that manufactures, stores, vends ice cubes completely automatic. Twenty-four hour continuous operation the year round. Insulated housings insure operation in all types of weather. Eliminates bagging and transporting labor. Largest bulk storage bin available. Approximately 1,000#. Vendor less than four foot square. Shipped self-contained, complete with ice machine. Up to 1200# ice making capacity per day. Many other exclusive features. Several models to choose from. Make huge savings on over-all cost of installations. Exclusive franchise protected territories available if you can qualify now. Visit our factory. Write or call immediately.

LINGLE REFRIGERATOR CO., INC.

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BEWIGGED footmen introduce Kelvinator's 3-cu ft "Lady K" refrigerator to British market with all tradition and dignity according to the coming out of a society debutante. Three "Prince of Wales" feathers attached to a sparkling tiara mounted on a red velvet cushion tops the box.

ported today in important quantities and will be imported tomorrow in increasing quantities.

Second, we must learn to market on a one-world concept. This means competing with countries having low labor costs, and employing the most modern manufacturing techniques. It means exploration of virginal markets such as Africa and the Near East.

Third, we must relate all that is happening in the world to our domestic market. It is the rare industry which will not feel the full impact of the shrinking world in the next 5 to 10 years.

Let's stop fooling ourselves. We're in for the most active competition we've ever faced. We must be aware of the challenge to our economy and society in a world which is shrinking geographically, but expanding every other way.

Let's start with simple things such as information. Many foreign businessmen are multilingual and can think in other languages than their own. We, unfortunately, are late in realizing that it is a real advantage to speak the customer's language—and even more of an advantage to understand the nuances of his thoughts in his own language.

And when you hear that Russian scientists are the best read in the world—do you translate that to business? Let's read and study foreign periodicals. They are readily available and many are even printed in English. Use the knowledge you gain—don't look down on it because it's foreign. It may be better than our own.

Let's study the reports from abroad in general and specialized publications. Let's attend exhibits of foreign goods here. And let's go to trade shows overseas.

The United States Department of Commerce offers a tremendous amount of help and data for which all of us have spent a huge sum of money. They offer complete packages of know-how and practical help on specific markets and products. Not enough of us are using this information.

2. We must know more about the way foreign industry thinks, creates, adapts and sells. Let's not shrug off the competition with "they imitate." They're not imitating any more—they're innovating.

3. Realize that people are the same—and that they're different. Not everybody thinks Americans are the greatest gift to this green earth. And if we'll take the attitude that we can learn — as well as teach — our marketing just might be that much sharper. Understand nationalism in others—and we'll prosper ourselves.

Study foreign products. Smell them, feel them, analyze them—turn them over, see what makes them tick. When have we last torn down our foreign competitor's product for an impartial laboratory test of findings? We'll find that price isn't the only thing they have.

Somewhere are bright people, modern people, people with up-to-date machinery, people who have discovered how to motivate labor to turn out quality goods —they're the people who will be facing up to us in the next 10 years using international television, 1200-mile-an-hour planes, and the brightness of novelty and newness to lure consumers away from the trite and the tried, the mediocre and the monotonous, the safe and the sane.

How are you going to answer? Let's not fall back on higher American hourly rates as our handicap. We must dig deeply into other reasons for the ability of foreign competitors to undersell us.

Design Functional Products

Product design might be a profitable area to explore. Designing products from a marketing point of view might eliminate gadgetry and concentrate

(Continued on next page)

WRONG LINE VOLTAGE?
Correct it...
with an ACME ELECTRIC TAPPED WINDING TRANSFORMER

Whenever the line voltage differs from the normal voltage required by the motor driven appliance, one of these Acme Electric Tapped Winding Transformers is the simplest and most economical means of correcting the problem.

For example: If only a 240 volt single phase circuit is available and the ½ HP motor of the air conditioner or other equipment is rated for 115 volts, a type T-32564 tapped winding transformer can be plugged into the line and will provide the exact voltage required. Or, if the available circuit is 208 volts and the 3 HP motor of the refrigeration compressor is rated at 230 volts, a type T-32610 transformer will solve the voltage problem. No need to do expensive re-wiring or order special motors.

Full details about the applications for Tapped Winding Transformers are contained in Bulletin 162. Write for your copy.

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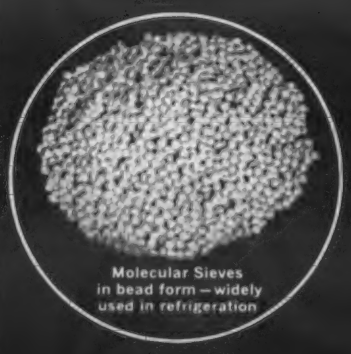
LINDE now has available **new hard bead** desiccants . . . with greater than ever particle strength for refrigeration systems . . . specifically designed to eliminate freeze-up and corrosion.

Today, the vast majority of original equipment manufacturers and replacement cartridge suppliers look to LINDE—not only for materials "tailored" to rigid specifications—but for dependable Technical Service on all problems of static and dynamic desiccation.

For samples of Molecular Sieves and full information on proven applications, write: Dept. AC-081 Linde Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y. **In Canada:** Union Carbide Canada Limited, Linde Gases Division, Toronto 12.



Molecular Sieves in bead form—widely used in refrigeration

Linde MOLECULAR SIEVES

"The Original Synthetic Zeolite" (Patented)

UNION CARBIDE

One World—A Marketing Reality--

(Continued from preceding page)

on function. People abroad are not as sophisticated as our American consumers. They are more likely to want functional products, rather than those which add nonessentials.

People who are emerging from long years of scarcity see things differently than through the eyes of a people of plenty.

We must take the lead in discovering and directing American business to the most profitable and rapidly growing markets abroad, just as we do at home.

Today, American businessmen have a long-term investment of $28 billion overseas. Within this next decade this investment is expected to double.

Where will the money be spent?

What are the big markets today?

What will be the big ones tomorrow?

Recognizing that creating foreign markets is a task that's beyond the control of any individual organization, we must realize the need for teamwork in international affairs between government and industry.

Cultivate your State Department Council on Economic Affairs in the lands you plan to do business in. They can be of great help on both sides of the problem—your product flowing in, and the competitive product flowing out. Through such coordinated effort we can do everything that a foreign manufacturer can do, and we can do it better.

We should urge our industries to cooperate with foreign governments, especially in underdeveloped countries, in making studies to develop financial plans, marketing plans, manpower development plans, and the like.

The cooperation of whole industries or groups of noncompetitive manufacturers could be enlisted in such projects to their and our mutual benefit.

Finally, we must educate management to move marketing from the sales bullpen to the front. Marketing must be considered as the leading element in the struggle for company survival and growth.

Production and finance will adjust to marketing needs, marketing inspiration, marketing innovation, marketing creativity. Too long, marketing has fallen back on rationalization rather than results.

Management is entitled to a different kind of performance in marketing—and if that performance is forthcoming, marketers can expect to receive the kind of top level treatment they believe they deserve.

Effective marketing co-ordination never faced a more serious challenge than it does today. When Wendell Willkie created his one-world theme, it sounded like a political rallying point. Today, it's a marketing reality few American businessmen can ignore.

Your future and my future—in fact our survival—depends on the action we take in this Brave New World of the present.

Parts to Spare

HARLAN GROSSHANS, Fedders Corp. export manager, looks over parts of Fedders room air conditioners manufactured by the Fedders Brazilian licensee, Radio Importadora, Porto Alegre. Looking on, center, is Otto Hoffmiester, formerly chief engineer for the Brazilian firm and, at right, Carlos Rettmann, a director of Radio Importadora.

Frick Looks to Latin American Market

WAYNESBORO, Pa. — Frick Co. has announced the establishment of a new regional office at 1190 N. E. 125th St., North Miami 61, Fla., which will be the headquarters for Frick sales in the Caribbean, Mexico, Central America, and South America.

W. B. Clements, president, declares that the opening of this office is in line with the plans for expansion of Frick sales coverage on a world-wide basis.

Joaquin Alvarez, who has been head of Frick's International Sales Dept. for many years, has been selected to head-up this operation.

Alvarez, a graduate of Carnegie Tech, is an experienced refrigeration engineer and has been instrumental in installing many major international projects throughout the world.

Clements stated: "We feel that the Latin American area represents the single largest potential market for foreign sales of Frick equipment, and present and future projection indicates that these markets are rapidly expanding and afford an opportunity for Frick Co. to participate in the development of modern food processing and storage facilities."

Williams Heads European Operations For Worthington

HARRISON, N. J.—J. R. L. Williams has been elected vice president-European Operations, Worthington Corp., it was announced by Walther H. Feldmann, president.

J. Williams

Williams, whose headquarters are in Paris, France, will coordinate all production, engineering, sales and service functions of seven associate companies located in Austria, France, German, Italy, and Spain.

In his new capacity, Williams also will be responsible for integrating the output of these overseas plants with exports from the United States, and maintaining liaison with a number of European licensee manufacturers. Williams joined Worthington in 1959 as general European manager.

"The growth of Worthington's export business and the development of subsidiary and associated companies abroad has shown continuous progress since the company's first European sales office was established in the 1880's," it was noted.

"A pioneer among United States companies entering overseas markets, Worthington has been a manufacturer in Europe for 60 years, and an exporter to European markets for more than a century.

"The company today maintains 36 manufacturing facilities and employs 14,000 people throughout the world."

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THE SPACE BARRIER
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Now, Aerovox offers a savings of approximately 15% in volume for space-savings requirements with no sacrifice in performance or reliability.

Designed to meet today's needs for space-saving, Aerovox Motor-Run Capacitors offer a new high in performance with a new low in height. These units, available in voltage ratings of 165, 236, 370, 440 and 660 VAC in a wide range of capacitances, are furnished in drawn metal cases with double-lock seams and are hermetically sealed for continuous duty operation. Aerovox Motor-Run Capacitors are supplied with double blade universal terminals. New one-piece dual cup bushings meet all UL physical requirements . . . prevent terminal twisting and increase assembly strength. Exclusive Aerovox "Weatherguard"† 80-147 UL approved case finish provides maximum protection against rust and corrosion.

AEROVOX MOTOR-START CAPACITORS

Aerovox offers a complete line of top-quality Motor-Start Capacitors featuring an exclusive electrolytic formula rigidly controlled for purity to assure dependable performance and long service life. Vibration protection against broken internal connections is assured by special sealing compound used to imbed section in case. Positive seal guards against adverse environmental conditions. Phenolic and aluminum cases available.

*CAPACI-BILITY
An Aerovox characteristic. Capability to design, develop and manufacture capacitors to best meet customers' requirements.

Prompt delivery schedules in production quantities.

WRITE FOR COMPLETE DETAILS. †Trademark

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...a little moisture in the refrigerant, plus heat, forms destructive acids, which eat at insulation, cause burn-outs, develop clogging sludge.

That's one of the reasons Thawzone is the choice of service men to cure and prevent troubles in refrigeration and air conditioning systems. It contains a chemical genie that speedily *destroys every trace of moisture,* and *prevents* its return. Thawzone stops acid formation—eliminates freeze-ups — minimizes corrosion and copper plating — helps keep expansion valves and other parts rust-free, sludge-free — scavenges out oxygen.

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*Reg. tradenames: DuPont & Allied Chemical.

TWO OTHER TAKE-ALONG TROUBLE SAVERS

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BRAZIL

Growing Middle Class Offers Potential for Sale Of Air Conditioning—Obstacles Are Many

SAO PAULO, Brazil — There is, as the song goes, an awful lot of coffee in Brazil. There are a lot of other things in Brazil, too, including a substantial market for air conditioners. Part of the country lies right on the Equator.

With a population of about 60 million persons, Brazil is becoming industrialized rapidly, and a middle class is growing.

Thus there is a growing potential market for air conditioners here, according to Harlan Grosshans, export manager for Fedders Corp., whose room air conditioners are made and sold in Brazil under a licensee arrangement with Radio Importadora, S.A., Porto Alegre.

Obstacles Cited

Unfortunately, there are a number of factors which make successful exploitation of this growing market somewhat of a problem. These factors include a severe credit shortage, an inflationary economy, certain governmental restrictions on imports, transportation and delivery difficulties and, in most areas, a lack of sufficient electrical power.

Because of a lack of ready credit, and the high cost of borrowing (interest and finance charges are often as high as 35-40%), a manufacturer often is forced to curtail his operations, with the result that sales volume at retail is reduced.

To make matters worse, there are few financial institutions existing which will lend money to the retailer or the consumer. Thus, the burden of credit falls on the manufacturer, who is limited in the amount of paper he can carry since he has a tough time getting credit himself.

The problem of money and credit is aggravated by a persistent inflationary cycle in the Brazilian economy. The steady decline in the value of money must be considered by the few existing lending institutions, even on short-term loans. Long-term loans are practically impossible to get.

Average Room Unit Retails at $500-$600

These institutions cover themselves by increasing interest charges on loans, thereby adding to the inflationary spiral. The result, at the retail level, is that the price of an average size room air conditioner runs about $500-$600, or two to three times the United States price.

The Brazilian government recently has instituted measures which, it is hoped, will ease this inflationary cycle.

Another problem facing the Brazilian manufacturer, the Fedders executive notes, is the importation of parts and other equipment, which must be paid for in dollars.

To acquire dollars, the manufacturer must buy them at a premium at a government-conducted weekly auction. Under this procedure, known as "the purchase of agios," the importer may buy up to $50,000 per week, if this amount of dollars is available.

The importer then is given a paper, the agio, which states that "x" amount of dollars has been made available for him to import from the U.S.A.

Gov't Discourages Import of Autos, Air Conditioners

In certain product categories, such as autos and air conditioners, the Brazilian government discourages importation of parts by setting prohibitive, though legal exchange rates.

Thus, the importer must pay a premium for dollars as high as 50% and in some cases, 300-400%, above the official exchange rate.

The importer also must pay for his dollars within a three day period, even though he may not receive the merchandise he is importing for up to six months, at which time he must pay duties on the parts imported.

This system ties up the manufacturer's capital, restricts his ability to extend credit to his retailers, and makes it extremely difficult to determine the cost of the finished product before it is marketed; thus it is hard to establish a retail price.

Because Radio Importadora sells directly to retailers, the delivery situation is less complicated than it might be if distributors were involved. However, Brazil is a large country, and the distances from plant to retailers are long and the roads poor—which presents a transportation problem.

In most cases, shipments go by air, adding to the final retail cost.

While the situation is difficult, it is far from untenable. A market exists and money is being made. Marketing techniques are good and there are plenty of retail outlets. Advertising and retail promotions of top caliber are helping to expand the market annually in all areas.

Brazil is an excellent example of a rapidly expanding economy. If the inflationary spiral slows down, the economy will slow down, making more money available. Lending institutions will then lower their rates and the economic capacity of the potential consumer will improve.

When the economic capacity of potential consumers improves, as it seems certain to do, this already solid market will add up to many, many coffee pots full of gold.

Book Gives Sources Of Financing for Overseas Trading

NEW YORK CITY — Public and private sources of financial aid to U. S. businessmen engaging in overseas trade and investment are described in the American Management Association's new Management Report 59, "Sources and Methods of International Financing."

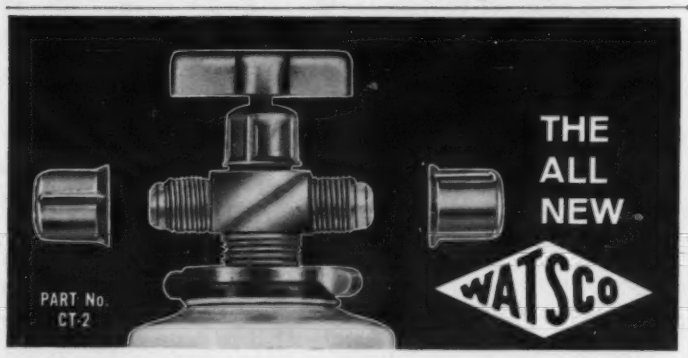
Representatives of eight government and quasi-governmental agencies — including Britain's Export Credits Guarantee Department — contribute a chapter each on the aims and current operating procedures of their own agencies.

The national and international agencies whose programs are described are: Export-Import Bank of Washington, Development Loan Fund, Investment Guarantees Div. of the International Cooperation Administration, International Monetary Fund, International Bank for Reconstruction and Development, Inter-American Development Bank, International Finance Corp., and the Export Credits Guarantee Dept. of the British Government.

Among the private sources discussed are the corporations organized under provisions of the Edge Act, European commercial banks, Swiss credit institutions, and the Latin American capital market.

A special feature of this report is an account of the company's experiences in establishing and managing a sales and manufacturing subsidiary in Mexico.

Price of the paperbound publication is $4.50 (AMA members, $3). The AMA's address is 1515 Broadway, New York 36, N. Y.



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Connect a gauge on one port while charging the system through the other port

Charge through any number of cans simultaneously, thus eliminating the need for a charging manifold

The Twin Port Can Tap Valve is made of the miracle *Delrin which has all the properties of brass, yet the lightness of plastic.

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1. One piece steel needle and shaft makes it impossible for the needle to loosen and fall out
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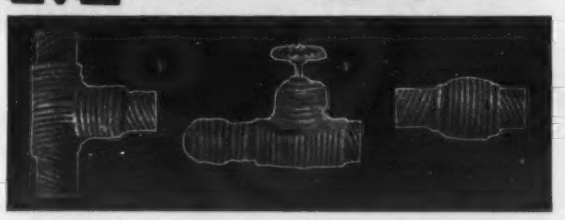

No tools. No vapor-seals, no fasteners, brads or adhesives. Wrap NoDrip Tape spirally around any size pipe, joints, tees, valves, angles . . . and the job's done! NoDrip Tape is a pliable, cork-filled, self-adhering product. Forms a *permanent* air-tight, 100% vapor- and moisture-proof jacket. Stops condensation drip, sweating, frost. Ends rust and corrosion.

MORTELL NoDrip PLASTIC COATING

. . . For big areas, large pipes, tanks, air ducts. Another fine Mortell refrigeration product. Applies with brush or trowel to metal, concrete, brick, plaster, tile or composition surfaces. Permanently stops condensation, rust, corrosion.

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Makers of Mortite Caulking Cord and Mortite Caulking Gum

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Please send full information about the complete line of Mortell refrigeration products.
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Firm_____
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Export Survey--

(Continued from Page 1)

all or portions of their lines are produced.

Thirty-seven firms license foreign manufacturers to turn out their products overseas.

These foreign plants and licensees are scattered over 27 countries throughout the world. In all countries except Canada, Austria, and Switzerland, licensing is the predominant (and from comments received, the most desirable) method of operation. For details, see Table I on page 61.

Sixty-nine of the reporting firms said they shipped their products abroad through their own export department. Forty-three used export agencies. Six used other means, such as the export department of the parent corporation or the facilities of other exporting companies. As the above figures indicate, some firms used both their own export department and an agency.

Some firms are reluctant to tell what proportion of total dollar volume is represented by overseas sales and most wouldn't reveal the proportion of net profit from that area.

However, 78 firms did give percentage figures on dollar volume and 33 gave figures on net profit. The data provided indicates that for most firms, over-

(Continued on Next Page, Col. 3)

Where U.S. Firms Have Plants, Licensees Abroad

In response to the NEWS survey, 37 manufacturers in or associated with the air conditioning, heating, and refrigeration industries said they licensed foreign firms to make their products and 27 companies said they owned plants abroad.

Here is a listing, by country, of the participating firms, showing what types of products they manufacture in each country. (L) designates licensee. No marking means an American owned plant or plants.

Reminder: This is NOT a complete listing of ALL firms in our industries that manufacture or license abroad.

ARGENTINA

(L) Bendix-Westinghouse—Compressors and condensing units.
(L) Carrier Corp.—Air-cooled air conditioning equipment.
(L) Hupp International Div.—Room air conditioners.
(L) Linde Co., Div. of Union Carbide Corp.—Unionmelt welding apparatus.
(L) Marley Co.—Water cooling towers.
Metals & Controls, Inc.—Thermal motor protectors, starting relays.
Penn Controls, Inc.—Refrigeration controls.
(L) Thermo King Corp.—Mechanical refrigeration units for trucks, trailers, railway cars.
(L) Utility Appliance Corp.—Air coolers, blowers, and gas furnaces.

AUSTRALIA

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.
(L) American-Standard, Detroit Controls Div.—Expansion valves.
(L) B-I-F Industries, Inc.—Chemical feeders.
Black & Decker Mfg. Co.—Portable power tools.
(L) Buffalo Forge Co.—Blowers and air conditioning cabinets.
(L) Carrier Corp.—Air-cooled air conditioning equipment.
(L) Coleman Co., Inc.—Space and water heating equipment.
(L) Cutler-Hammer, Inc.—Motor controls.
(L) Dunham-Bush, Inc.—Refrigeration and air conditioning equipment, compressors and condensing units.
(L) Hussmann Refrigerator Co.—Commercial refrigeration equipment for supermarkets.
(L) International Metal Products Div., McGraw-Edison Co.—Evaporative coolers.
(L) Marley Co.—Water cooling towers.
(L) McCray Refrigerator Co., Inc.—Refrigerated display cases.
Metals & Controls, Inc.—Thermal motor protectors, starting relays.
(L) Sweden Freezer Mfg. Co.—Soft ice cream freezers.
(L) Torrington Mfg. Co.—Air moving impellers, blower wheels, and fan blades.
(L) Tuttle & Bailey—Grilles and registers, high pressure boxes, ceiling diffusers, and accessories.
(L) Tyler Refrigeration Corp.—Milk coolers.
(L) Utility Appliance Corp.—Air coolers, blowers, and gas furnaces.
(L) Westinghouse Electric Corp., Air Conditioning Div.—Air conditioning equipment through 100 hp.

AUSTRIA

American-Standard, Industrial Div.—Cast iron and steel radiators, cast iron boilers.

BELGIUM

American-Standard, Industrial Div.—Cast iron radiators and boilers.
(L) Westinghouse Electric Corp., Air Conditioning Div.—Air conditioning equipment through 100 hp.

BRAZIL

(L) Bahnson Co.—Humidification and air conditioning equipment.
(L) Dunham-Bush, Inc.—Compressors and condensing units.
(L) Lilie-Hoffman Cooling Towers, Inc.—Cooling towers.
(L) Linde Co., Div. of Union Carbide Corp.—Welding and cutting apparatus.
(L) Marley Co.—Water cooling towers.
(L) Rotary Seal Div.—Mechanical shaft seals.

CANADA

American Air Filter Co., Inc.—Air filters; dust collectors; heating, ventilating and air conditioning equipment.
American-Standard, Detroit Controls Div.—Appliance valves.
B-I-F Industries, Inc.—Differential producers, chemical feeders, butterfly valves.
Bailey Meter Co.—Instruments and controls.
Black & Decker Mfg. Co.—Portable power tools.
Buffalo Forge Co.—Blowers and air conditioning.
(L) Clarage Fan Co.—Fans, etc.
Coleman Co., Inc.—Central, space, and water heating equipment.
Cutler-Hammer, Inc.—Motor controls.
Dunham-Bush, Inc.—Refrigeration and heating equipment, compressors and condensing units.
Hupp International Div., Hupp Corp.—Refrigerators and electric ranges.
Hussmann Refrigerator Co.—Commercial refrigeration equipment for supermarkets.
Iron Fireman Mfg. Co.—Oil and gas burners, furnaces, and boilers.
Johnson Service Co.—Thermostats, relays, valves.
Kenmore Machine Products, Inc.—Driers, strainers, capillary assemblies, heat exchangers, accumulators.
Lau Blower Co.—Blowers
Lennox Industries, Inc.—Gas and oil furnaces.
(L) Louis Allis Co.—Adjustable speed drives.
(L) Marley Co.—Water cooling towers.
Marsh Instrument Co.—Gauges, valves.
Skil Corp.—Portable electric tools.
(L) Thermo King Corp.—Mechanical refrigeration units for trucks, trailers, railway cars.
Torrington Mfg. Co.—Air moving impellers, blower wheels, and fan blades.
Tuttle & Bailey—Grilles and registers, high pressure boxes, ceiling diffusers, and accessories.
(L) Tyler Refrigeration Corp.—Self-service display cases, frozen food cases, and commercial refrigerators of all types.

CHILE

(L) Coleman Co., Inc.—Space and water heating equipment.
(L) Hupp International Div.—Portable and space heaters.
(L) Utility Appliance Corp.—Air coolers, blowers, and gas furnaces.

COLOMBIA

(L) Hupp International Div.—Electric refrigerators, kerosene and gas ranges.

Maximum Refrigeration Efficiency
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Specialized Refrigeration
STANDARD OF THE INDUSTRY
FOR OVER THIRTY YEARS

Cold-Cel TRUCK PLATES
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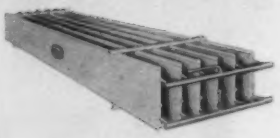
Truk-Cel EUTECTIC BLOWER UNITS

THE **COMPLETE** LINE OF TRUCK REFRIGERATION EQUIPMENT

QUICK FREEZE SHELF STANDS AND PLATES



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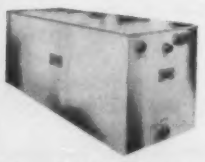
For Low Temperature Food Storage

Heat-Cel AUTOMATIC HOT GAS RE-EVAPORATOR FOR BLOWER COILS

Freze-Cel MODEL 2735
SELF-CONTAINED DOUBLE CONTACT FOOD FREEZER
6, 7 or 8 Station Units For The Smaller Operation

Freze-Cel MODEL 4672
DOUBLE CONTACT FOOD FREEZER
9 to 24 Stations—Available without cabinet for installation in existing low temperature area



Ice-Cel ACCUMULATOR FOR AIR CONDITIONING AND PRODUCT COOLING

ALSO *Air-Cel* AC-DC CIRCULATING FAN UNITS
CABINET HOLDOVER PLATES
HOLDOVER CABINET LINERS
HOLDOVER CARTRIDGES
SALAD TABLE PLATES
ACCUMULATOR TYPE HEAT EXCHANGERS
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Inquiries from American exporters also invited

FRANCE

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.
American-Standard, Detroit Controls Div.—Oil devices; (L) Oil devices and engine thermostats.
American-Standard, Industrial Div.—Cast iron boilers and radiators, steel boilers, heating and sanitary brass, and heating controls.
(L) B-I-F Industries, Inc.—Proportioning pumps.
(L) Bailey Meter Co.—Industrial instruments and controls.
(L) Carrier Corp.—Air-cooling equipment.
(L) Coleman Co., Inc.—Space and water heating equipment.
(L) Flexible Tubing Corp.—Flexible tubing for air conditioning.
(L) Hussmann Refrigerator Co.—Commercial refrigeration equipment for supermarkets.
(L) Johnson Service Co.—Thermostats and valves.
(L) Linde Co., Div. of Union Carbide Corp.—Welding apparatus, powder cutting, and arc cutting.
(L) McCray Refrigerator Co., Inc.—Refrigerated display cases.
Metals & Controls, Inc.—Thermal motor protectors, starting relays.
(L) Thermo King Corp.—Mechanical refrigeration units for trucks, trailers, railway cars.
(L) Tyler Refrigeration Corp.—Self-service display cases, frozen food cases, and commercial refrigerators of all types.

WEST GERMANY

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.
American-Standard, Industrial Div.—Cast iron radiators and boilers, refrigeration and cooling equipment, air conditioning equipment, heating and sanitary brass, heat exchangers.
(L) Carrier Corp.—Air-cooling equipment
Coleman Co., Inc.—Space heating equipment.
(L) Linde Co., Div. of Union Carbide Corp.—Welding and cutting apparatus.
(L) McCray Refrigerator Co., Inc.—Refrigerated display cases.
(L) Remington Corp.—Window air conditioners.
(L) Thermo King Corp.—Mechanical refrigeration units for trucks, trailers, railway cars.
Tyler Refrigeration Corp.—Self-service display cases, frozen food cases, and commercial refrigerators of all types.

INDIA

(L) Bahnson Co.—Humidification and air conditioning equipment.
(L) Buffalo Forge Co.—Blowers and air conditioning cabinets.
(L) Carrier Corp.—Room air conditioners, self-contained equipment.
(L) Dunham-Bush, Inc.—Refrigeration and air conditioning equipment.
(L) Utility Appliance Corp.—Air coolers, blowers, and gas furnaces.

(Continued on Page 62)

TABLE I

Where Survey Finds U. S. Goods Are Produced Abroad

(P—Own Plants, L—Licensees)

Country	P	L	Total
Canada	20	5	25
Australia	2	18	20
United Kingdom	3	17	20
France	3	12	15
Italy	2	8	10
Argentina	2	7	9
Germany	3	6	9
Mexico	3	6	9
Netherlands	4	4	8
Brazil	0	6	6
India	0	5	5
Chile	0	4	4
Japan	1	3	4
Spain	0	4	4
Iran	1	2	3
South Africa	0	3	3
Belgium	1	1	2
Israel	1	1	2
Norway	0	2	2
Uruguay	0	2	2
Venezuela	0	2	2
Austria	1	0	1
Colombia	0	1	1
Iraq	0	1	1
New Zealand	0	1	1
Sweden	0	1	1
Switzerland	1	0	1

Export Survey--

(Continued from Page 60)

seas sales account for less than 5% of dollar volume and 10% of net profit. (See Table III and IV.)

While 33 firms export their products to all areas of the world, the others operate on a selective basis, concentrating on one or two areas, or excluding one of two areas.

A complete list of exporting companies and the areas they serve is printed on page 63.

Most popular geographic area for market penetration is Latin America with 95 firms seeking business there. Canada follows with 86 firms and Europe with 83. Complete rankings are found in Table II.

TABLE II

Where Exports Are Going

No. of Cos.	Exporting To:
95	Latin America
86	Canada
83	Europe
75	Middle East
71	Far East
70	Australia
60	South Africa
50	North Africa

Government restrictions on the import of American goods continues to be the major problem of exporters, according to those who participated in the survey.

A close second is the worrisome matter of finding representatives with the necessary know-how to install, service, and sell the equipment once they receive it. This problem is also tied in with the difficulty of finding proper distribution for the product.

Lack of dollars abroad and low-priced local or foreign competition were mentioned as major thorns to foreign operations.

Respondents to the survey also listed among their problems the low cost of foreign labor and materials, government restrictions on manufacturing, credit difficulties, differing electrical characteristics, the lack of local capital and income in many countries, the need for faster and less expensive communication, burdensome red tape, high freight costs, and long delivery time.

TABLE III

What Selling Abroad Means To Dollar Volume

No. of Cos. Reporting	% of Total Dollar Volume
40	0- 5%
24	6-10%
6	11-15%
8	Over 15%

TABLE IV

What Selling Abroad Means To Net Profits

No. of Cos. Reporting	% of Total Net Profits
15	0- 5%
12	6-10%
3	11-15%
3	Over 15%

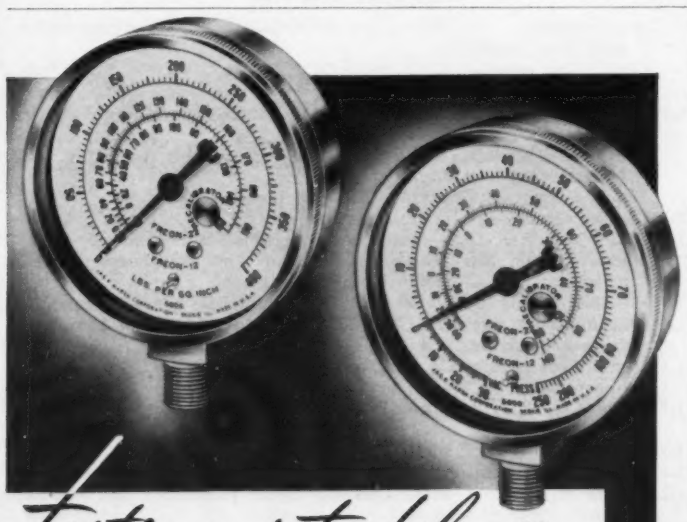
Two participants in the survey offered more extensive comments on the problems of overseas operations.

R. D. Bailey, director of marketing for Tuttle & Bailey, Div. of Allied Thermal Corp., observed that "the extremely fast rise in the manufacturing economy of foreign countries, particularly in Europe, has practically eliminated the export agency as a means of merchandising.

"Such agencies cannot put enough men in the field on our type of product to keep abreast of progress.

"Licensees are a better answer to the problem, but lack of knowledge on the part of American manufacturers to the actual

(Continued on Next Page)



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Instrument beauty! Not just outward beauty. Beauty that runs deep. The beauty of quality and precision...all the way through.

Polished brass cases with sparkling bevelled glass crystals held in knurled threaded rings that give ready access to the "Recalibrator"...so vital in a testing instrument. Two scales in color marked in corresponding temperatures of R-12 and -22. Precision movements that deliver the remarkable accuracy of plus or minus 1% of dial reading.

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MIGHTY MITE MOTOR PROTECTORS

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UNIFORM QUALITY

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FAST DELIVERY

MINIMUM PRICE

YOUR PRODUCT PROTECTION

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MECHANICAL INDUSTRIES PRODUCTION CO.

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Export Survey--

(Continued from preceding page)

market conditions and methods of doing business in the various countries hampers our ability to properly supervise our licensees.

"A direct factory office, centrally located in several areas of the world, is probably the only satisfactory answer at the moment."

Sam West, sales manager for Tyler Refrigeration International, noted that "our foreign operations have increased our export sales. We have a good organization of distributors in Europe. Our German and French facilities do not make all the models we have available.

"Therefore," he added, "we receive orders to be shipped from the States. This past year, we have exported more to West Germany, Italy, and France than we have ever done before."

West also commented that "before the era of 'International Setups,' the United States exported the surplus of its products. Today, we cannot use this haphazard method of disposing of our surplus products. It is essential that equipment must be designed to fit the local market requirements.

"This can best be accomplished with an overseas operation."

Plants, Licensees Abroad--

(Continued from Page 61)

IRAN

(L) Coleman Co., Inc.—Space and water heating equipment.
Slant/Fin Radiator Corp.—Baseboard radiation.
(L) Utility Appliance Corp.—Air coolers, blowers, and gas furnaces.

IRAQ

(L) Utility Appliance Corp.—Air coolers, blowers, and gas furnaces.

ISRAEL

Slant/Fin Radiator Corp.—Baseboard radiation.
(L) Utility Appliance Corp.—Air coolers, blowers, and gas furnaces.

ITALY

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.
American-Standard, Industrial Div.—Cast iron radiators and boilers, air conditioning equipment, heat exchangers, water heaters.
(L) Bahnson Co.—Humidification and air conditioning equipment.
(L) Buffalo Forge Co.—Large blowers and air conditioning cabinets.
(L) Carrier Corp.—Centrifugals.
(L) Johnson Service Co.—Thermostats, valves.
(L) Linde Co., Div. of Union Carbide Corp.—Welding and cutting apparatus.
Metals & Controls, Inc.—Thermal motor protectors, starting relays.
(L) Tuttle & Bailey—Grilles and registers, high pressure boxes, ceiling diffusers, and accessories.
(L) Westinghouse Electric Corp., Air Conditioning Div.—Air conditioning equipment through 100 hp.

JAPAN

(L) Carrier Corp.—Centrifugals, room air conditioners.
(L) Linde Co., Div. of Union Carbide Corp.—Welding and cutting apparatus.
Penn Controls, Inc.—Refrigeration controls.
(L) Westinghouse Electric Corp., Air Conditioning Div.—Air conditioning equipment through 100 hp.

MEXICO

(L) American-Standard, Detroit Controls Div.—Expansion valves.
(L) Carrier Corp.—Self-contained and room air conditioners.
Cutler-Hammer, Inc.—Motor control, low voltage distribution apparatus.
(L) Hupp International Div.—Freezers, refrigerators, room air conditioners, portable and space heaters.
(L) Hussman Refrigerator Co.—Commercial refrigeration equipment for supermarkets.
International Metal Products, Div. of McGraw-Edison Co.—Evaporative coolers.
(L) Linde Co., Div. of Union Carbide Corp.—Welding and cutting apparatus.
(L) Marley Co.—Water cooling towers.
Recold Corp.—Refrigeration and air conditioning equipment.

NETHERLANDS

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.
(L) Carrier Corp.—Centrifugal gas compressors.
Coleman Co., Inc.—Space heating equipment.
(L) La Crosse Cooler Co.—Coin-operated selective vending machines.
(L) Linde Co., Div. of Union Carbide Corp.—Welding apparatus and cutting apparatus.
Metals & Controls, Inc.—Thermal motor protectors, starting relays.
Penn Controls, Inc.—Refrigeration controls.
Sweden Freezer Mfg. Co.—Soft ice cream freezers.

NEW ZEALAND

(L) Tyler Refrigeration Corp.—Self-service display cases, frozen food cases, and commercial refrigerators of all types.

NORWAY

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.
(L) Kenmore Machine Products, Inc.—Driers, strainers, capillary assemblies, heat exchangers, accumulators, etc.

SOUTH AFRICA

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.
(L) B-I-F Industries, Inc.—Chemical feeders.
(L) Cutler-Hammer, Inc.—Resistors.

SPAIN

(L) Bendix-Westinghouse—Compressors and condensing units.
(L) Frick Co.—Shell ice makers.
(L) McCray Refrigerator Co., Inc.—Refrigerated display cases.
(L) Westinghouse Electric Corp., Air Conditioning Div.—Air conditioning equipment through 100 hp.

SWEDEN

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.

SWITZERLAND

American-Standard, Industrial Div.—Cast iron boilers and radiators, steel radiators.

UNITED KINGDOM

(L) American Air Filter Co., Inc.—Air filtration and dust control equipment.
American-Standard, Industrial Div.—Cast iron radiators and boilers, copper fittings.
Black & Decker Mfg. Co.—Portable power tools.
(L) Carrier Corp.—Air handling equipment.
(L) Cutler-Hammer, Inc.—Motor controls, small motor switches.
Dunham-Bush, Inc.—Heating equipment and semi-hermetic compressors; (L) Air conditioning equipment.
(L) Flexible Tubing Corp.—Flexible tubing for air conditioning.
(L) Hussmann Refrigerator Co.—Commercial refrigeration equipment for supermarkets.
(L) Iron Fireman Mfg. Co.—Stokers and oil burners.
(L) Johnson Service Co.—Thermostats and valves.
(L) Linde Co., Div. of Union Carbide Corp.—Welding and cutting apparatus.
(L) Marley Co.—Water cooling towers.
(L) McCray Refrigerator Co., Inc.—Refrigerated display cases.
(L) Metals & Controls, Inc.—Thermal motor protectors and starting relays.
(L) Parker-Kalon, Div. of General American Transportation Corp.—Thread forming and thread cutting tapping screws, socket screw products, and other headed and threaded fasteners.
(L) Remington Corp.—Incremental system air conditioners.
(L) Thermo King Corp.—Mechanical refrigeration units for trucks, trailers, railway cars.
(L) Torrington Mfg. Co.—Air moving impellers, blower wheels, and fan blades.
(L) Tuttle & Bailey—Grilles and registers, high pressure boxes, ceiling diffusers, and accessories.
(L) Westinghouse Electric Corp., Air Conditioning Div.—Air conditioning equipment through 100 hp.

URUGUAY

(L) American-Standard, Industrial Div.—Fans and exhausters.
(L) Fogel Refrigerator Co.—Supermarket equipment.

VENEZUELA

(L) Hupp International Div.—Refrigerators, room and commercial air conditioners, kerosene, gas, and electric ranges.
(L) Marley Co.—Water cooling towers.

Notes

Bastian-Blessing Co. reported that it will manufacture fountain food service and cafeteria equipment in Germany in the near future for marketing in the Common Market plus Austria.

Ebco Mfg. Co. is considering manufacturing water coolers and dehumidifiers in Canada.

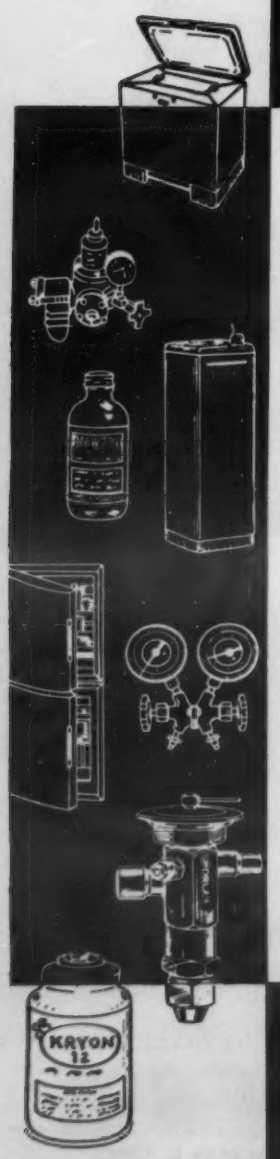
Fleetwood, International, manufacturer of commercial refrigeration fixtures, is considering licensing in the near future.

The Trane Co. said company policy would not permit listing its plants and licensees abroad.

Warren Webster & Co., Inc. is licensing the manufacture of its baseboard radiation and steam specialties, but did not state in what countries.

Equipped to serve you, as Export Specialists in Refrigeration, with the leaders in

REFRIGERATION EQUIPMENT and REFRIGERATION COMPONENTS



The rich sales potential in the overseas market can be added to your domestic sales without cost or concern. Our record of more than 38 years of successful worldwide representation for leading refrigeration and air conditioning lines includes such services as financing, insurance, promotion, etc. Our Refrigeration Division now includes:

SPORLAN VALVE CO., INC.: thermostatic expansion valves; solenoid valves; "Catch-all" filter driers; liquid level controls; "See-all" moisture and liquid indicators.

REVCO, INC.: home freezers; "Bilt-In" refrigerators and freezers; industrial low-temperature freezers.

MADDEN BRASS PRODUCTS CO.: refrigeration fittings; dispensing and service valves; charging and testing units, gauges, charging lines.

RANNEY REFRIGERATOR CORP.: upright freezers and combination refrigerator-freezers; most units with 230v, 50 cycle compressors.

KRYON® 12, pure Refrigerant 12 (Dichlorodifluoromethane); freeze-tested, sealed, guaranteed dry; packaged in 15 oz. cans for both gas and liquid use.

HUBBELL CORP.: back-pressure regulating valves; combination back pressure regulating and stop valves; compensating back pressure regulating valves; dual pressure regulating valves; reverse acting back pressure regulating valves; automatic suction stop valves; solenoid valves; strainers; gauges.

THAWZONE HIGHSIDE CHEMICALS, INC.: "Thawzone" refrigerant dehydrant; "Trace" liquid leak detector; "Leak-Lock" joint sealer.

TEMPRITE PRODUCTS CORP.: a complete line of self-contained, electric drinking water coolers; hot-and-cold models; bottle models.

Selected Distributorships are available. Your inquiries are invited.

Ad. Auriema, Inc.

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INTERNATIONAL SALES MANAGEMENT SINCE NINETEEN TWENTY ONE

Survey Tells Who Is Exporting Where

Here are the 107 United States firms which told the NEWS they are exporting products of or associated with the air conditioning, heating, and refrigeration fields.

Along with each company name is given code numbers to indicate the areas to which the company exports. Areas designated by each number follow:

1—Canada
2—Europe
3—Latin America
4—Middle East (west of Iran)
5—Far East (Iran to Japan)
6—North Africa (above the Sahara)
7—South Africa (below the Sahara)
8—Australia and the islands of the Pacific

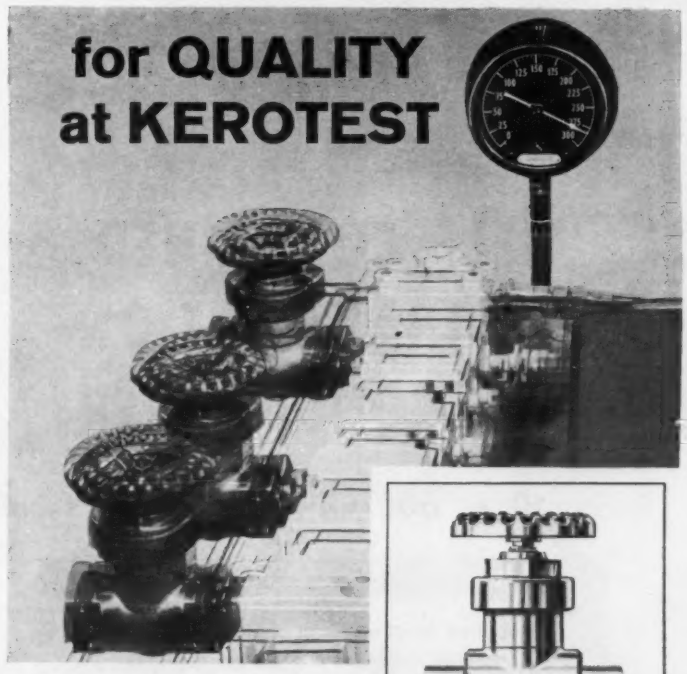
This is NOT a complete list of ALL companies which are exporting cooling and heating products.

Ace Pump Corp.—1, 3, 8
Acme Industries, Inc. — All Areas
Addison Products Co.—1
Aerovox Corp.—1, 2, 3, 4, 5
Airserco Mfg. Co.—All Areas
American Air Filter Co., Inc.—2, 3
American - Standard, Detroit Controls Div.—All Areas
American-Standard, Industrial Div.—All Areas
Ansul International Corp. S.A.—1, 2, 3, 5, 6, 8
B-I-F Industries, Inc. — All Areas
The Bahnson Co.—1, 3, 4, 5
Bailey Meter Co.—2, 3, 4, 5
Bastian-Blessing Co.—1, 2, 3, 4, 5
Bendix - Westinghouse — All Areas
Beverage-Air Sales Co.—1, 3
The Bevco Co., Inc.—1, 3
Black & Decker Mfg. Co.—All Areas
Bohn Aluminum & Brass Corp.—2, 3, 4, 5, 7
Buffalo Forge Co.—All Areas
Bush Mfg. Co.—1, 3
A. M. Byers Co.—1, 2, 3
Carrier Corp.—All Areas
Chemical Solvent Co., Inc.—All Areas
Chicago Valve Plate & Seal Co.—1, 3
Cincinnati Sub Zero Products—All Areas
Clarage Fan Co.—1, 2, 3, 4, 5, 8
The Coleman Co., Inc.—All Areas
Congress Drives Div., Tann Corp.—1, 2, 3, 5, 7, 8
Cutler - Hammer, Inc. — All Areas
Dunham-Bush, Inc.—2, 3, 4, 5, 6, 7, 8
Ebco Mfg. Co.—All Areas
Edwards Engineering Corp.—1
Esco Cabinet Co.—Not specified
Everlast Refrigeration Co.—All Areas
Federal Refrigerator Mfg. Co.—1, 3, 4, 5
Flake Ice Machines, Inc., Div. of Helmco-Lacy—2, 3
Fleetwood, International — 2, 3, 4, 5, 6, 7, 8
Flexaust Co.—1
Flexible Tubing Corp.—1, 2, 3, 8
Flint & Walling Mfg. Co.—1, 3, 4, 5, 7
Fogel Refrigerator Co.—1, 2, 3, 4, 5, 6, 8
Fraser & Johnston Co.—Not specified
Frick Co.—All Areas
Friedrich Refrigerators, Inc.—1, 3, 4, 5, 8
Frigikar Corp.—1, 2, 3, 4, 5, 8
Gem Refrigerator Co.—1
General Electric Co.—2, 3, 4, 5, 6, 7, 8
Halstead & Mitchell Co.—1, 2, 3, 4, 5, 8
Henry Valve Co.—1, 2, 3, 4, 5, 6, 7
Howe Ice Machine Co.—1, 3, 4, 5, 7
Hupp Internation Div., Hupp Corp.—All Areas
Hussmann Refrigerator Co., Export Div.—2, 3, 5, 7
Ideal Cooler Corp.—1, 2, 3, 4, 5, 8
International Metal Products Div., McGraw-Edison Co.—All Areas
Iron Fireman Mfg. Co.—1, 2, 3, 4
Johnson Service Co. — All Areas
Kason Hardware Corp. — All Areas
Kauffman Air Conditioning Co.—3, 4, 5, 6, 7, 8
Kenmore Machine Products Inc.—3
La Crosse Cooler Co. — All Areas
Lau Blower Co.—2, 3, 4, 5, 7, 8
Lennox Industries, Inc.—1
Lilie-Hoffman Cooling Towers, Inc.—1, 2, 3
Linde Co., Div. of Union Carbide Corp.—All Areas
The Louis Allis Co.—1, 2, 3, 7, 8
The Marley Co.—All Areas
Marsh Instrument Co. — All Areas
McCall Refrigerator Corp.—1, 2, 3, 4, 5, 6
McCray Refrigerator Co., Inc.—1, 2, 3
Melchior, Armstrong, Dessau, Inc.—2, 3, 4, 5, 6, 7, 8
Metals & Controls, Inc.—2, 3, 5, 8
Minerallac Electric Co.—1
Mortell Co., J. W.—1, 2, 3, 4
Mueller Climatrol, Div. of Worthington Corp.—1, 2, 3, 4, 5, 6
Nor-Lake, Inc.—Not specified
Parker-Kalon, Div. of General American Transportation Corp.—All Areas
Penn Controls, Inc.—2, 3, 4, 5, 6, 7, 8
Recold Corp.—All Areas
Redmond Co., Inc.—2, 3, 4, 5, 6, 7, 8
Remcor Products Co.—3, 4, 6, 7
Remington Corp.—1, 2, 3, 4, 5, 6, 7
Revcor, Inc.—1, 2, 8
Rotary Seal Div., Muskegon Piston Ring Co.—1, 3, 6, 8
Rudy Mfg. Co.—1, 2, 3, 4, 7, 8
Schnacke, Inc.—1, 2, 4, 6, 8
Sealed Unit Parts Co., Inc.—All Areas
Skil Corp.—1, 2, 3, 4, 5, 7, 8
Slant/Fin Radiator Corp.—1, 2
Sporlan Valve Co.—1, 2, 3, 4, 5, 7, 8
Emil Steinhorst & Sons, Inc.—1, 3
Stiles Karlsonite Corp.—All Areas
Stokes Corp., F. J.—1, 2, 3, 4, 5, 7, 8
Sweden Freezer Mfg. Co.—All Areas
The Halsey W. Taylor Co.—1, 2, 3, 4, 5, 8
Thermo King Corp.—All Areas
Torrington Mfg. Co.—2, 3, 7, 8
The Trane Co.—All Areas
Tuttle & Bailey Div. of Allied Thermal Corp.—2, 3, 4, 5, 6, 7, 8
Tyler Refrigeration Corp.—1, 2, 3, 4, 5, 7, 8
Uniflow Mfg. Co.—2, 3, 4, 5, 7, 8
Utility Appliance Corp.—All Areas
Victor Products Corp.—1, 2, 3, 7, 8
Watsco, Inc.—1, 2, 3, 4, 7, 8
Warren Webster & Co., Inc.—1, 2, 3, 4, 8
Western Supply Co., Mfg. Div.—1, 3, 4, 6, 8
Westinghouse Electric Corp., Air Conditioning Div.—All Areas
Xcelite, Inc.—1, 2, 3

"AIR-COVER" PROTECTOR for through-the-wall air conditioners is designed for use in semi-tropical climates. A large shipment was recently made to Saudi Arabia. Demonstrating assembly of Air-Cover are (l. to r.) Fernando Rodriguez, export sales manager, Air-Cover Div.; Sam Millward, president of Diversified Sales Organizations, Inc., national and international sales representative for Air-Cover; and John N. Kohnen, inventor of Air-Cover and president of Air-Cover Corp., Miami, Fla. Air-Cover is made of aluminum with white, baked enamel finish. It protects outside portion of through-the-wall air conditioner from sun, rain, and dirt, and improves appearance of building.

SHAKEDOWN

for QUALITY at KEROTEST



Vibration-proof Construction

Only precision, quality-controlled construction can take this kind of concentrated abuse. These valves, under a pressurized refrigerant, are vibrated at 3600 cycles per minute for prolonged periods. At intervals throughout the accelerated test, Kerotest engineers evaluate performance and condition of seat seals, diaphragm seals, solder seals and handwheels.

The high standards of material quality and craftsmanship maintained at Kerotest assure you of smoother valve operation and minimum maintenance. Tested and proved design features, quality control at each step of manufacture combine to make Kerotest the best valve that money can buy.

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ASK FOR KEROTEST VALVES AT YOUR LOCAL WHOLESALERS

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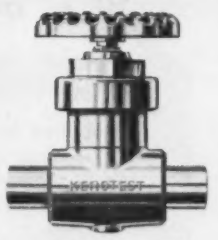

KEROTEST 520 DIAPHRAGM PACKLESS GLOBE VALVE

The precision-built brass valve for all types of refrigeration and air conditioning systems. Ideal for liquefied petroleum gas bulk plants, pipe line loading racks, laboratory installations, nitrogen, oxygen (degreased) and compressed air applications.

Specify the Kerotest 520 globe valve for operating pressures up to 400 psi and temperatures up to 200° F Use it in vacuum service applications to 1 micron.

KEROTEST QUALITY CONTROLLED FEATURES

- Replaceable spindle seats for continuous positive seating
- Metal to metal backseating above and below diaphragms
- Beryllium copper and stainless steel diaphragms
- Generous handwheel

KEROTEST

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We represent the best known American manufacturers of quality equipment. Over 20 years' experience in handling export orders. No agents—you buy direct from us. We honor confirmed, irrevocable letters of credit. Orders are expertly packed and shipped anywhere in the world. Liberal transportation allowance. Send export orders and inquiries to our New York office. Cable address: HACOREF.

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REFRIGERATION • AIR CONDITIONING • ELECTRIC MOTORS

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SAVE MONEY, time and effort by ordering from our new *Dependabook*, the most complete catalog of all. 250 pages. Over 10,000 items carried in stock. *Wholesale only.* Your orders filled really fast by mail, or they can be picked up at one of our six big warehouses.

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FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

Factory Foreman on Board of Directors? Trade Unions Sponsor Idea—It Works

West Germany

DUSSELDORF, West Germany — A factory foreman on the board of directors? Impossible!

Maybe so for America's grab-as-grab-can Hoffas; but trade unions in Western Europe's fastest growing economic unit don't think it's unusual. They are sponsoring it — and it is working.

This so-far lonely West German program, termed "co-determination," allows a factory worker (chosen at large and re-elected after a term of from three to five years) to participate in the decisions of the company for which he works.

Foremen normally are chosen for this position because of their on-the-spot familiarity with mutual problems of workers and executives.

Thus far, co-determination has been limited to the mining and steel industries. However, the giant German Federation of Trade Unions looks forward to the day when co-determination will be standard procedure in all businesses.

To guard against anyone forsaking loyalty toward proletariat co-workers and joining the ranks of capitalists, the job pays only $90 a year.

American labor leaders might regard this idea as being some form of traitorship, but to German unions it seems like an ideal way to assure salubrious results for their members. They want the corporations for which they work to prosper.

Currently, laborers are being imported from Italy (and absorbed from East Germany) to handle the tight labor load pending the time when this decimated nation can regenerate the fantastic number of young males lost in World War II.

Such bugaboos as automation don't bother the West German worker. He welcomes it, inasmuch as it will increase productivity and hence his wages (which are rising at the rate of 10% per year), while simultaneously compensating for the short supply of labor in the continuously expanding industry of West Germany.

The Bonn Government, incidentally, keeps its hands off business in this nation, which seems more dedicated to the Free Enterprise theory than any other country on earth.

Interest In Residential Applications Expected To Boost Use of Cooling

DUESSELDORF, West Germany—Demand for air conditioning in West Germany is expected to increase rapidly as the result of greater interest in residential applications.

"The general public is beginning to demand air conditioning in homes as well as public buildings," declares Ernst A. Teves, co-owner of Alfred Teves KG, Frankfurt/Main.

"The public demand for purified air at a comfortable temperature has been sharpened by the increasing pollution of air by industry," Teves asserts. "Air conditioning is an answer to the desire to keep out the noise and gases of growing cities. It is a component part of the rising standard of living in Germany," he says.

German manufacturers such as ATE, Kaeser, and Kessler & Luch, according to Teves, currently are offering models from ¾ to 20 hp adaptable for home use; imports range from ¼ to 30 hp.

Most popular residential units in Germany today, says Teves, are cabinet models that can be connected to a central hot water or steam heating system to provide year-round air conditioning.

There have been comparatively few installations of air-cooled units, he also comments, but this is bound to change.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Cleaver-Brooks To Broadens Overseas Activities

MILWAUKEE — Glenn W. Leupold has been advanced to fill a new post on the president's staff at Cleaver-Brooks Co., manufacturer of packaged boilers.

According to John C. Cleaver, president, the new post was created to help broaden the company's overseas activities.

On the international scene, Leupold will serve as managing director of foreign manufacturing. His responsibilities will include investigations, evaluation and follow-through on foreign expansions involving manufacturing.

On the local scene, Leupold will monitor and coordinate the transition of engineering developments into regular manufacturing channels. Leupold joined Cleaver-Brooks in 1953 as works manager of the Boiler Div., and in 1959 was named works manager of Aqua-Chem, Inc., a Cleaver-Brooks affiliate in Waukesha, Wis. Aqua-Chem is a manufacturer of saline water conversion equipment.

Connor Names Silcox Export Representative

DANBURY, Conn. — Connor Engineering Corp. here has appointed Sillcox Refrigeration Corp., New York City, as export sales representative for Connor's lines of "Kno-Draft" air diffusers, high velocity valve attenuators, and "Dorex" air recovery and purification equipment.

Silcox will sell and service Connor equipment in the Central and South American and Far East countries.

Thomas Clinton of Sillcox will service the Connor account.

Cool Kuwait Zoo

KUWAIT — The hot sun of the Persian Gulf won't bother visitors to the zoo and botanical gardens of the Kuwait National Museum. They will make the rounds in a glass-roofed, air conditioned train.

A Pre-Engineered
Custom Built

usAIRco

SELF CONTAINED
CENTRAL STATION
AIR CONDITIONER

10 to 60 TON CAPACITY

Supplied as a unit with choice of integral air-cooled condenser . . . evaporative condenser . . . or water-cooled condenser.

Model illustrated: DRK40AC, 37 ton capacity

Saves Installation Cost! Saves Maintenance Cost! Opens tremendous new opportunities in shopping center, factory, bowling lane, variety chain, restaurant, amusement places and many other commercial and industrial applications.

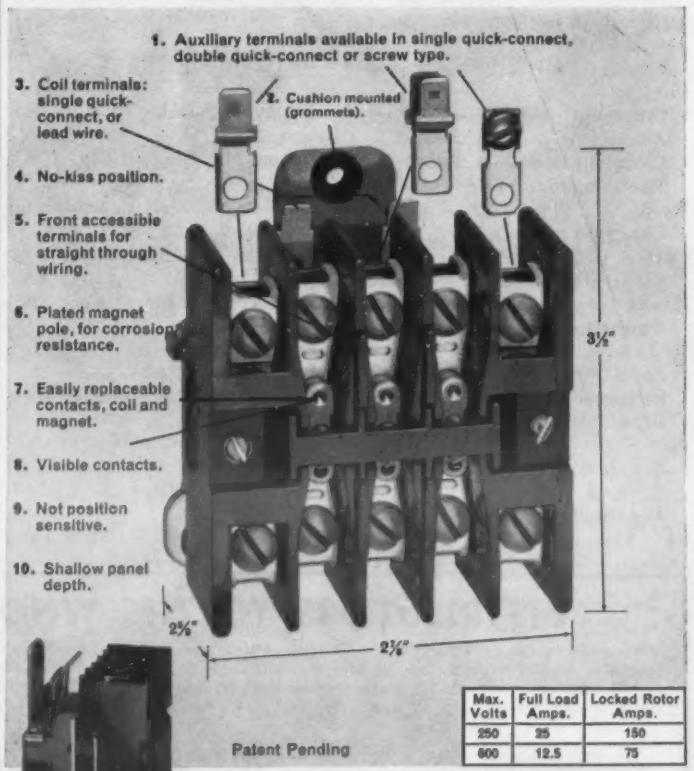
Write for Bulletin "94A-1"
and Bulletin "93-94-22"

United States Air Conditioning Corporation
Dept. 77 Delaware, Ohio
EXPORT DEPT.: 13 E. 40th St., New York 16, N.Y., USA

NEW RBM
25 AMP — 2 AND 3 POLE
CONTACTOR
TYPE 85
DESIGNED FOR UL AND CSA LISTING

Simplifies panel circuitry — helps eliminate terminal boards — cuts wiring costs.

Here is the first air conditioning contactor designed so auxiliary terminals can be added to power wiring terminals. Also, extra dummy wiring terminals can be added when required. Such flexibility can help eliminate terminal boards, lower wiring costs, and provide more versatile and simplified panel circuitry. Auxiliary terminals can be #8 screw or ¼" single or double quick-connect. Dummy terminals are #10 screw with or without the auxiliary terminals. Consult your application engineer or write for Bulletin C16.


1. Auxiliary terminals available in single quick-connect, double quick-connect or screw type.
2. Cushion mounted (grommets).
3. Coil terminals: single quick-connect, or lead wire.
4. No-kiss position.
5. Front accessible terminals for straight through wiring.
6. Plated magnet pole, for corrosion resistance.
7. Easily replaceable contacts, coil and magnet.
8. Visible contacts.
9. Not position sensitive.
10. Shallow panel depth.
3½"
2⅝"
2⅞"

Patent Pending

Max. Volts	Full Load Amps.	Locked Rotor Amps.
250	25	150
600	12.5	75

ONLY RBM HAS ENGINEERED A COMPLETE FAMILY OF AIR CONDITIONING CONTROLS

TYPE C-30, C-40, C-50 CONTACTORS Write for Bulletin 1070
TYPE 80 CONTROLLER Write for Bulletin C-11
TYPE 75 POWER RELAY Write for Bulletin 1030.
SERIES 129000 SHUNT TYPE RELAY—SPNO, SPNC OR NO-NC Write for Bulletin 1010-A.
GENERAL PURPOSE RELAY Write for Bulletin 1060
SERIES 128000 POTENTIAL STARTING RELAYS Write for Bulletin 1010-A
BIMETAL TIME DELAY RELAYS AND THERMO-STATIC DEVICES Write for Bulletin C-15
ENCLOSED BANTAM RELAY TYPES 83 & 84 Write for Bulletin 1080

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RBM CONTROLS DIVISION
LOGANSPORT, INDIANA
Factories Located at North Manchester and Logansport, Indiana

at this moment you are demonstrating

THE VITALITY OF A WEEKLY INDUSTRY NEWSPAPER

There is no other form of communication today that quite equals the terse style of the newspaper. It is pointed, it is crisp, and when all other reading must be pushed aside, the newspaper is there—demanding and receiving attention.

In air conditioning, heating and refrigeration, just as in advertising, the man interested in events and trends while they're still news is naturally the executive with the greatest responsibility and fewest hours to read.

For 34 years, *Air Conditioning, Heating & Refrigeration NEWS*, the industry's only newspaper, has been meeting the needs of such executives in manufacturing, contracting, and all phases of distribution. It serves 22,053* paid subscribers a weekly menu of industry news—as it happens.

It is the one publication with weekly news vitality—aimed solely at the racing pace of the key executive who, in the final analysis, is the man to put the stamp of approval or disapproval on your product. Utilize this vitality for your products—make sure your advertising includes a solid schedule in the industry's only newspaper.

**Average net paid circulation, Dec. 31, 1960 ABC Audit Report. Circulation includes: 12,601 dealer-contractors, distributor contractors, and service and installation contractors; 945 wholesalers; 5,099 manufacturers.*

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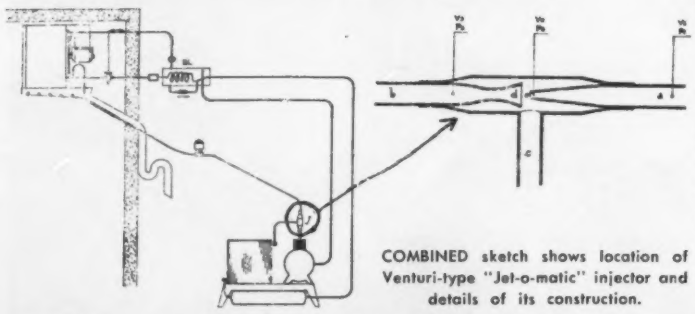
Italian Defrost System for Air-Cooled Equipment Claimed Effective to 32°F



COMBINED sketch shows location of Venturi-type "Jet-o-matic" injector and details of its construction.

MILAN, Italy—Using a specially designed Venturi-formed injector, a new hot gas defrost system has been developed by Contardo s.p.a. here.

The "Jet - o - matic" system uses the injector in place of the normal tee-piece between the head of the compressor and the condenser, Contardo explains. Further, a bottle-accumulator on the suction line prevents refrigerant which has condensed in the evaporator coil from slugging back to the compressor.

One injector outlet is connected to the discharge side of the compressor; the second outlet is connected to the hot gas line; the third outlet is connected to the condenser and receiver.

Pressure and velocity differentials are such that refrigerant from the condenser and receiver is sucked, and after boiling in the condenser, joins the superheated gasses coming from the compressor to the evaporator.

"The use of saturated or near-saturated defrost gasses, instead of normally superheated ones, means that more weight of refrigerant can be used to accomplish the defrost and therefore a greater quantity of latent heat is available," Contardo claims.

Pyramid Adopts Amprobe Name, Plans Expansion

MEETING to discuss Amprobe distribution in Venezuela are (l. to r.) F. G. Danning, export sales manager for Amprobe Instrument Corp.; Peter Plasencia, director of Plasencia, C.A., Amprobe representative for Venezuela; and Marty Schwartz, vice president in charge of sales for Amprobe.

LYNBROOK, L. I.—Pyramid Instrument Corp., manufacturer since 1949 of portable electrical test equipment, has changed its name to Amprobe Instrument Corp., Sam Koch, president, announced.

He also outlined the company's expansion program.

Pyramid designs, manufactures, and markets lines of clamp-on volt-ammeters, cable tracers, "Remcon" remote control lighting systems for both residential and industrial use, etc. The clamp-on volt-ammeters and cable tracers have been extensively advertised under the trade-mark "Amprobe."

"Over the years," Koch said, "we have made thousands of Amprobe instruments and these in turn have made countless friends for Amprobe. Most of our distributors and customers have always referred to us as the Amprobe Instrument Corp. Our new name, then, will be in keeping with trade usage."

Discussing the company's planned expansion program, Koch said that "at least two to three new major products would be introduced each year." Elaborating, he pointed out that:

1. A new cable tracer was introduced this Spring. Variations of this tester are now being developed for various other applications.

2. The company will introduce this Fall a new miniaturized strip chart recorder in keeping with miniaturization trends of the instrument industry. This recorder is extremely versatile and will be available as a service instrument for refrigeration and air conditioning engineers, among others, the company said. It will also be available as a component which can be incorporated into instrument systems and controls.

3. The company is in the final engineering stages of other products for the growing electric-electronic service and maintenance field.

4. The Remcon line of low voltage wiring devices is being expanded to include new products in the commercial construction field.

5. The company will introduce lines of components for signalling and control systems late in 1962.

Because of the expansion program, engineering personnel have been added and research facilities will be substantially increased, Koch stated.

Martin Schwartz, vice president in charge of sales, said that the company's expanded operations make necessary additions to the sales department. It now has three sales managers each heading the following divisions: Amprobe instruments, Remcon wire devices, and export. A fourth sales manager will be appointed to head the recently formed recorder division.

Air Condition New Turin Aqueduct Building

TURIN, Italy—Central year-round air conditioning has been installed in the new five-story office building of the Turin Municipal Aqueduct Utility here by Carlo Ferrari Co.

Its system combines more than 120 fan-coil-filter units located under windows to handle the summer sensible load with a central multi-zone air distribution system, according to Alessandro Novellini, assistant sales manager of the firm.

Designer of this installation was Ugo Anselmi, Ferrari's chief engineer. Domenico Avenati, technical manager, aided.

Use Own Fan Coil Units

Chilled water for both the cooling and ventilating systems is supplied by a Trane 40-ton packaged chiller, while the fan-coil units are of Ferrari design and manufacture.

The building covers an area of 6,600 sq ft. Design conditions are as follows:

Summer—78°F and 55% rh inside at 90° and 60% rh outside.

Winter—68° and 55% rh inside at 14° and 80% rh outside.

The fan-coil units produced and installed by Ferrari are of two sizes: 180 and 270 cfm. Each has a copper-aluminum coil, air filter, drain pan, two blower wheels, and a fractional horsepower, three-speed 220-v motor. They follow the usual practice of having the air intake at floor level and air discharge on top.

Operation of each unit is controlled by a Honeywell room thermostat.

52% Solar Heat Gain

These units were sized, Novellini explains, on the basis of an average sensible cooling load of 4,400 Btu, of which 52% is solar heat gain.

Central air system for ventilation provides low velocity air to all conditioned spaces through high side wall outlets. In the main office (open to the public) four air changes per hour are provided; in other space there are two changes per hour.

An exhaust system with fans located just under the roof of the building assures pump-out of interior air.

The multi-zone air conditioning unit in the basement includes blower; coils for pre-heating, heating, and cooling air, plus filter and humidifier sections.

Control of this unit is handled by Honeywell thermostats, humidistats, motorized valves, and modulating dampers.

Heating needs, which also include conventional radiation for stairways, service rooms, and basement, are supplied by two cast iron boilers with a total capacity of 2,400,000 Btu.

For Better Curling

Lay Freezing Pipes Crosswise on Rink

TORONTO, Ont., Can. — A local consulting engineer in refrigeration, R. A. Stencel, has come up with an answer—based on a scientifically-controlled test—to the long-standing argument in curling circles over the better way to lay freezing pipes in a curling rink — crosswise or lengthwise.

It seems that the way the pipes are laid affects the movement of the curling stone.

Stencel undertook to decide the controversy after a Noranda, Que., man appealed to several persons, including Stencel, to settle the matter in a scientific manner.

Stencel borrowed a stone-throwing machine, then assembled movie cameras to record the pattern of stones on two otherwise identical rinks at Toronto's Granite Club—one with crosswise piping (pipes laid across the path of the stone) and the other with lengthwise piping.

In his now-completed report, Stencel says: "A greater draw of the stone is achieved with the freezing pipes running crosswise to the rink." Because of this draw, curling "can be played with more skill and accuracy of the broom and weight, irrespective of the kind of game played."

Due to higher costs, Stencel said, curling clubs have tended to avoid crosswise piping. He knows of only about a dozen rinks in the country so equipped.

Southeast Asian States Organize 'Common Market'

BANGKOK, Thailand—Everybody is getting into the act. All Europe is uniting economically and politically. Nations of Central and South America are exploiting the possibility of doing likewise this week.

As the NEWS goes to press, August, 7, comes a flash that Thailand, Malaya, and the Philippines are organizing an Association of Southeast Asian States.

Other nations in this general area will be invited to join them in another "common market."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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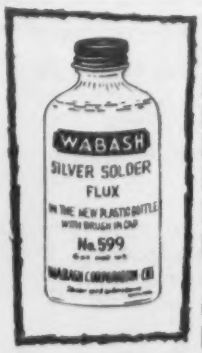

WABASH Silver Solder Flux

NEW UNBREAKABLE PLASTIC BOTTLE— Six-ounce bottle comes complete with brush-in-cap for easy application. Wabash Silver Solder Flux provides increased capillary action for faster, easier, and more satisfactory results. Less fumes, glare, and irritation to the skin. Other sizes available . . . write for prices.

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United States of Europe A-Borning

(Continued from Page 1, Col. 5)

Colossus.

Then, if warlike elements rear ugly heads in Asia, Africa, or South America, an international police force might be mobilized to preserve peace.

Pipe dream? Oh, no. They're serious about this in London, Bonn, Paris, Rome, Geneva, Antwerp, Stockholm, Copenhagen, Athens, Haagen, Vienna, and elsewhere.

Their goals:

1. A United States of Europe, designed to end ancient jealousies which have fomented innumerable wars ever since the Holy Roman Empire fell apart.

1. Free trade and free enterprise, which have made the interlocked 50 states of the U. S. A. the most prosperous nation in the history of the world, would be emulated in Europa.

3. A politically sophisticated democracy so powerful that it could checkmate World War III (the war to make the world safe for insects) before it could begin, would be in the making.

Already the European Economic Community (the Inner Seven) has increased its internal trade by 50%, its living standards by 30%, its average wages by 20%, and virtually has erased unemployment in six nations.

Italy is the exception—but she is exporting excess workers to Germany and Switzerland.

The European Free Trade Association (the Outer Seven) has progressed more slowly. That lesson has been heeded by London's financial community which, incidentally is having sterling problems of its own.

"We aren't beating them, so we'd better join them," The Street has been advising Prime Minister MacMillan — who privately has been in favor of the Big Idea all along.

This proposed United States of Europe will be bigger than Russia or the U. S. A. (U. S. E. 260 million, Russia 210 million, U. S. A. 180 million) in terms of productive population and potential capital formation.

Moreover, its exploding economic power could underwrite exciting and prestige-value space exploration programs, seawater into freshwater developments, cancer and cardiac eradication, etc., just as America and the Soviets are doing.

Most important, it could police unruly elements south of the equator, and help us to help themselves toward a better life.

Business growth rates in Free Europe during the last 10 years have been astonishing. Try these on for size:

1. Gross annual production has risen from 142 billions of dollars to 300 billions (other currencies have been translated into our own at standard exchange rates.)

2. Industrial output has leaped 80%.

3. Exports are up 150%.

4. Investment in new facilities is averaging 20% annually (as compared with 14% in the U. S. A.).

5. Depreciation rates in Europe are much more liberal in all of the European nations than here.

6. Personal income taxes are lower, sales taxes higher.

7. Prices are stable, strikes almost unknown, and businessmen aren't harassed by their governments.

Result: The free enterprise idea, to which we pay lip service, has been adopted whole hog by the nations of Western Europe. So they are prospering mightily.

When (and if) the United States of Europe effectuates, the sky is the limit for their progress! And the U. S. A. will benefit by it, obviously.

NEWS LIBRARY OF PROFITS

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- ☐ Automatic Controls—$6.75
- ☐ Automatic Refrigeration—$13.50
- ☐ Boilers: Types, Characteristics, and Functions—$15
- Commercial Refrigeration—$1.50 each. ☐ C-1 ☐ C-2 ☐ C-3
- ☐ Handbook of Instrumentation and Controls—$15
- Key to Air Conditioning—$2 each. ☐ K-1 ☐ K-2 ☐ K-3
- ☐ Management Guide for Dealer-Contractors—$18
- ☐ New Master Service Manual—$1.50
- ☐ Refrigeration and Air Conditioning—$8.50
- ☐ Refrigeration Engineer's Manual—$3
- Refrigeration Problems and Their Solution—$1.50 each ☐ J-1 ☐ J-2 ☐ J-3 ☐ J-4 ☐ J-5
- Servicing Automobile Air Conditioners. ☐ Vol. 3 $1 Vols. 1 ☐, 2 ☐, 4 ☐, $2 ea.
- ☐ Parts and Labor Rates for Auto Air Conditioning—$30

Warm Air Heating & Air Conditioning Library

- ☐ Complete Library—$20
- ☐ Digest—$1.50
- ☐ 1. Comfort Survey—$1
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- ☐ 3. Calculating Heat Loss—$1.50
- ☐ 3. Simplified Heat Loss—$.75
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- ☐ 6. Adjusting Air Conditioning—$1.25
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- ☐ 8. Application Guide—$1.50
- ☐ 9. Year-round Systems—$1.25
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- ☐ 11. Summer Systems—$1.50

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LAFTA Proposal Would Set Up $200 Million Revolving Fund

PUNTA DE ESTE, Uruguay—When the meeting of the Latin American Free Trade Association gets under way here today (August 7) Argentina's finance minister will propose that a $200 million revolving fund be established to promote and stimulate trade between member nations.

The latter include, beside Argentina, Brazil, Chile, Mexico, Peru, and Uruguay.

LAFTA, which hopes to emulate the EEC and EFTA economic combines in Europe, would subscribe half the funds for this program, and solicit the other half from the U. S. A., Great Britain, and West Germany.

Agreement with Ameliorair Covers Sale, Manufacture of Ross Products

PARIS, France—Midland-Ross Corp. has negotiated an agreement with Amelioair, Societe Anonyme in Paris, for the manufacture and sale of a broad range of products of the J. O. Ross Engineering Div. of Midland-Ross Corp., Cleveland, Ohio.

In this latest expansion of Midland - Ross' fast - growing overseas operations, the firm also will acquire an equity interest in the French company whose present major product lines include air conditioning equipment for industry, textile machinery, and industrial ovens. Ameliorair has four plants in France.

Under the terms of the agreement, Ameliorair is granted the rights for the manufacture, sale, and distribution of hoods and ventilating systems used in the pulp and paper industry; ovens and dryers for processing rubber and other materials; ovens, dryers, and metal preparation units for paint finishing, and metal decorating lines; resin ovens and air heaters. All of these products are manufactured in the United States by the Ross Engineering Div.

In commenting on the agreement, Wade N. Harris, president of Midland-Ross, noted that the complete product lines of the company's Waldron-Hartig and Ross divisions now have been licensed for manufacture in Europe.

Earlier this year, Midland-Ross made an agreement with Henry Simon Ltd. in England for the manufacture and sale throughout Europe of the Waldron machinery products of its Waldron-Hartig Div.

"We intend agressively to continue further expansion of our foreign operations in Europe and elsewhere," Harris said.

Germany Establishes 125 Technical Schools In Underdeveloped Countries

BONN, W. Germany—While America ships dollars to underdeveloped lands, Free Germany sends them technical schools.

More than 125 complete academies have been set up, financed, and staffed by German technologists in such lands as Afghanistan, Iran, Jordan, Thailand, Korea, Bolivia, Chile, and Colombia.

At least a thousand teachers have been withdrawn from the German public school system and assigned to these help-our-neighbors academies. From German industrial firms have come another thousand instructors, along with equipment and machinery for training.

Big idea is to produce mechanics, operators, foremen, draftsmen, servicemen, and plant managers in these emerging nations.

"This program is important," explains Dr. Wolfgang Galinsky, who is in charge of the Ministry of Foreign Affairs' section on cultural agreements with other countries, "because the economic as well as the cultural standards of the foreign nations involved can be improved.

"The German government probably has more technical and trade schools in operation in the developing countries than any other nation in the world," Dr. Galinsky adds. "This is an important contribution to the development of other nations which need technical help."

Each developing country contributes land and the necessary buildings. Germany then delivers the machinery, laboratory equipment, books, teachers, and other personnel.

Export-Import Bank To Match Foreign Credit Terms

CHICAGO — The Export-Import Bank of Washington will endeavor, on behalf of American exporters, to match credit terms extended in other countries to support competitors of U.S. firms in international trade, according to Tom Killefer, first vice president and vice chairman.

Speaking at the third annual international trade conference sponsored by the First National Bank of Chicago, Killefer also asserted that exporters who complain the loudest about credit terms offered by their respective governments are those who have just lost orders.

"Few complaints," he added, "are received from exporters who have been successful in making the sale under negotiation."

Killefer commented that he has heard members of the British House of Commons ask why British exporters "can't have something comparable to the program of the Export-Import Bank." He said Germans tend to think that the British, or the Italians, give superior support to their exporters.

"So," he said, "we are not disturbed when we hear that the Europeans are offering better terms than is our bank. We have machinery now set up with these other countries to determine the actual credit terms offered through the facilities of other governments."

Political Disturbances Factor In Shifting Hupp World Sales

CLEVELAND—Hupp Corp.'s international sales in the first half of 1961 shifted according to import restrictions and political disturbances, according to Don H. Gearheart, president.

Declines were recorded in Venezuela, Iran, and Panama, but were offset by gains in Iraq, Kuwait, Peru, and Hong Kong.

"Canadian operations, while showing a loss for six months, were profitable in the second quarter," Gearheart noted. The improvement is a result of manufacturing cost reduction programs, consolidation of sales groups, and introduction of completely redesigned appliance products.

Contractor Federation - -

(Continued from Page 1, Col. 3)

A principal purpose of such a federation would be to develop a united approach on such problems as bid shopping, featherbedding in labor contracts, liberalization of the retained percentage formula in construction contracts, and other problems of a like nature.

The St. Louis meeting was called by Walter B. Lyle, president of the Contracting Plasterers' and Lathers' International Assn. Industry associations invited to participate included Refrigeration & Air Conditioning Contractors Assn.; Mechanical Contractors Assn.; Sheet Metal & Air Conditioning Contractors Assn.; National Assn. of Plumbing Contractors; and National Electrical Contractors Assn.

Westinghouse - -

(Continued from Page 1, Col. 2)

this protection was in effect for items shipped as much as 180 days after an effective price increase.)

Subsequently, Westinghouse prices in effect at the time of shipment would apply except that increases would not exceed 5% on shipments made within six months from the date of the order, or 10% on shipments made between six and 12 months.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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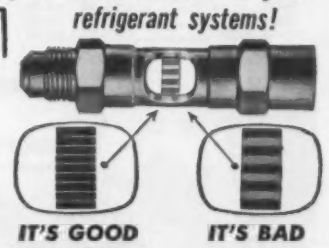

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IT'S GOOD

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IT'S BAD

If moisture enters the system, every other color bar changes from green to yellow—then it's bad—the dehydrator should be replaced. When the system is moisture-free again, the Reactor color bars will change back to their original solid green color.

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From the Files of the News

25 years ago . . .

Minnows in Kansas City are swimming in refrigerated water because fishermen there complained that the recent heat wave was killing their bait. . . . The Boston Beer Co. has installed a York air conditioning system in its fermenting room to insure a temperature of 40°F for the fermenting process and to eliminate the dropping of moisture and frost from the exposed pipe coils formerly used.

Carrier Engineering Corp. reports development of a line of year-round residential air conditioning and automatic heating equipment in two sizes, for use with either oil or gas furnaces. . . . J. R. Hertzler of York Corp. presented an analysis of the application factors which affect the selection of air conditioning equipment, before a joint ASHRAE-ASRE meeting.

Reporting from Egypt on his trip around the world, Editor George Taubeneck says that the need and demand for air conditioning in that country is great, but that economic factors thus far have held back any widespread use.

A manufacturer of railway type condensing units requested information as to whether his equipment was subject to the excise tax, and was referred to information published in the NEWS on this subject, but was also told to contact Deputy Commissioner of Internal Revenue D. C. Bliss for a final ruling. . . . Another reader wanted to know where to send a G-E hermetic unit for overhaul, and was advised that the most logical procedure would be to contact the manufacturer. Names of firms specializing in overhaul work were also supplied.

10 years ago . . .

Air conditioning has been credited by a "New York Times" reporter with making busy summers possible in Florida's "winter" resort areas, now comfort havens for summer vacationers from the North. . . . Credit terms have been eased on room air conditioners by the Federal Reserve Board; 15% down and 18 months to pay are terms under new law.

It's been predicted that more than 200 manufacturers of air conditioning and refrigeration equipment will exhibit at the 7th All-Industry Refrigeration & Air Conditioning Exposition in November. . . . Sales manager for Remington Air Conditioning Co. advocates the "visual" sales approach when seling "pinch-penny" customers; with 15 cakes of ice he illustrates that a ¾-hp air conditioner unit has a cooling effect equal to that obtained by melting 1,500 lbs of ice. And the cost of supplying enough ice for one month is $270, equivalent to the cost of an air conditioner.

Purdue university is conducting a study to determine if foods requiring the same temperature can be stored together without absorbing each other's odors; the effectiveness of activated carbon filters and other types of "air purification" in absorbing compounds given off by stored commodities is one of the study projects.

A hospital operating room air conditioner—designed for use in hazardous gas atmospheres and other special requirements—has been introduced by Trane Co. Safety provisions include an explosion-proof motor, a pneumatic control system, and capacity to use 100% outside air. . . . Two years' successful operation of a Roanoke, Va. office building's 225-ton heat pump system, using air as a heat source, shows it competitive with other fuels in the area and confirms its many advantages in operation. . . . Possibilities of designing a heat pump installation based on U.S. Weather Bureau records, which could indicated how much heat is available in the ground and air, has been suggested by a U. of Washington professor.

Connor Engineering Names Raman Sarmiento

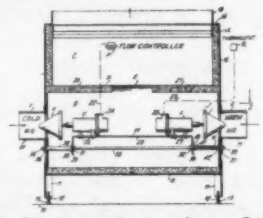
DANBURY, Conn. — Connor Engineering Corp., manufacturer of "Kno-Draft" air diffusers and high velocity valve attenuators and "Dorex" air recovery and purification equipment, has appointed Ramon Sarmiento as sales engineer for Connor's New York City office.

Immediately prior to joining Connor, he was with Hajoca Corp., Trenton, N. J., as manager of the Heating & Air Conditioning Dept.

PATENTS

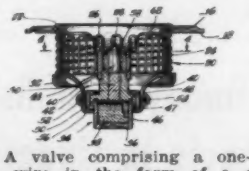
Week of April 25 (Concluded)

2,981,474. CONSTANT VOLUME AIR MIXING UNIT. James M. Drummond and Douglas W. Torry, Detroit, Mich., assignors to Thermotank, Inc., Detroit, Mich.



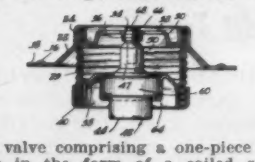
1. In a constant volume flow air mixing box of the type having opposed aligned cold air and warm air inlets and an outlet for the air mixture produced in the mixing box, a conical valve controlling each of said inlets, a motor controlling each conical valve having a reciprocable element to move the conical valve and a cylindrical body member, a thermostat controller connected to the warm air valve motor only, a volume flow controller connected to the cold air valve motor only; the combination therewith of a common horizonal sliding platform . . .

2,981,475. VALVE. Clarence P. Salmon and James W. Parmer, Elgin, Ill., assignors to Flexonics Corp., Maywood, Ill.



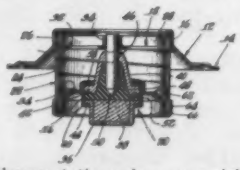
1. A valve comprising a one-piece solid wire in the form of a coiled spring arranged in cylindrical form with contiguous convolutions contacting one another to close the valve but separable to permit fluid flow therebetween, an annular member having an annular channel in which one end convolution of the coiled spring is secured and said annular member being apertured interiorly of said channel to permit flow of fluid to the interior of the coiled spring, a closure member of generally annular form having an annular channel facing the first-mentioned channel and in which the opposite end convolution of the coiled spring is mounted, said closure member having a central annular wall portion . . .

2,981,476. THERMOSTATICALLY CONTROLLED COILED SPRING VALVE. Clarence P. Salmon and James W. Parmer, Elgin, Ill., assignors to Flexonics Corp., Maywood, Ill.



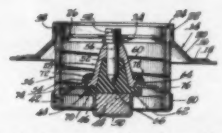
A valve comprising a one-piece solid wire in the form of a coiled spring arranged in cylindrical form with contiguous convolutions normally contacting one another to close the valve but separable to permit fluid flow therebetween, inner and outer annular members having inner and outer cylindrical wall portions space apart a distance equal to the thickness of the spring convolutions and providing a first channel with the free ends of the wall portion turned toward one another to provide a seat for the end of the coiled spring with adjacent end convolutions of the coiled spring secured in said first channel, said inner annular member being apertured interiorly of said first channel to permit flow of fluid to the interior of the coiled spring . . .

2,981,478. THERMOSTAT VALVE. Clarence P. Salmon, Elgin, Ill., assignor to Flexonics Corp., Maywood, Ill.



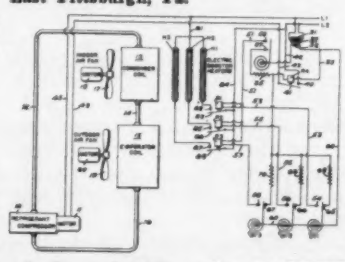
A thermostatic valve comprising a one-piece solid wire in the form of a coiled spring arranged in cylindrical form with contiguous convolutions contacting one another to close the valve but separable to permit fluid flow therebetween, a mounting member having an annular channel formation in which one end of the coiled spring is secured and said mounting member being apertured interiorly of the channel formation to permit flow of fluid to the interior of the coiled spring, a closure member of relatively high strength sheet metal including an outwardly extending annular portion and a channel in opposing alignment with the channel formation on said mounting member and in which the opposite end of said coiled spring is secured . . .

2,981,477. THERMOSTAT VALVE. Clarence P. Salmon, Elgin, Ill., assignor to Flexonics Corp., Maywood, Ill.



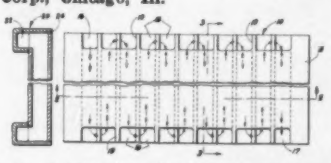
1. A thermostat valve structure comprising a first support member with an aperture therethrough, a second support member formed from a single sheet of material and including a cup portion of predetermined diameter merging into a generally axially extending portion of slightly enlarged diameter with said exially extending portion terminating in an inwardly directed flange portion spaced from the cup portion and said inwardly directed flange portion merging into a radially outwardly extending portion presenting the maximum diameter of said second support member greater than the aperture in said first support member . . .

2,981,479. AIR HEATING SYSTEMS. William K. Kyle, Staunton, Va., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa.



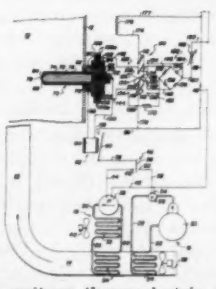
1. In a heating system having a prime heater, a booster heater, an indoor thermostat, an outdoor thermostat, a heat anticipating resistor for heating said indoor thermostat, a first circuit including said indoor thermostat for energizing said prime heater and said resistor when the indoor temperature is at a predetermined level, a second circuit partially completed by said indoor thermostat when the indoor temperature is at a predetermined level lower than said first mentioned level, for energizing said booster heater, and means including said outdoor thermostat for completing said second circuit when the outdoor temperature is at a predetermined level . . .

2,981,520. PLATE-TYPE HEAT-EXCHANGERS. Robert A. Chadburn, York, Pa., assignor to Borg-Warner Corp., Chicago, Ill.



1. A plate-type heat-exchanger comprising a panel member having top and bottom walls and including a plurality of transverse passageways therethrough, said top wall having a plurality of apertures formed therethrough on either end thereof whereby fluid may enter and leave said passageways by way of said apertures . . .

2,981,774. TEMPERATURE CONTROL APPARATUS. Russell B. Matthews, Wauwatosa, Wis., assignor, by mesne assignments, to Minnesota Mining and Manufacturing Co., St. Paul, Minn.



1. A unitary thermoelectric generator-thermoelectric heat pump assembly comprising first and second dissimilar thermoelements joined at a first thermojunction to form a thermoelectric generator having at least one second thermojunction, contact means for at least one of said thermojunctions, mounting means of insulating material on which said generator is mounted, third and fourth dissimilar thermoelements mounted on said insulating mounting member and joined at one end to said contact means to form a third thermojunction, said third and fourth thermoelements forming a thermoelectric heat pump having thermojunction and heat transfer means for the ends of said third and fourth thermoelements opposite those joined to said contact means.

Service Auto Air Conditioners QUICKLY . . . PROFITABLY

This new manual shows you immediately the model year of unit; names, numbers, and list prices of parts; time allowance and labor rate for several hundred different models produced 1957 through 1960.

You can make an accurate estimate of costs in a hurry, order the exact parts needed if not in stock, and get the repair job done quickly without wasting valuable time.

This book also shows which compressors and clutches are interchangeable on many makes and models. This lets you service a much greater variety of makes with little increase in inventory.

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Rambler
Rambler American
Lark
Studebaker

Independents
A.R.A.
Allstate
Clardy
Climatic Aire
Eaton
Equip-Aire
Frigiquip
Mark IV
Parkomat
Wardaire
Wizard

PARTS AND LABOR RATE BOOK

by R. V. Anderson
(Inventor of Mark IV)

252 pages, 8½ by 11
Illustrated, $30

Exploded views of evaporator assemblies produced by Independents show each part with number. Also listed are all makes and models of cars for which Independents made units during 1957-'60; major components and part numbers, refrigerant charges. Compressor and clutch assemblies are cross-referenced. Similar data is listed for Auto Manufacturers.

PROFITS ON JUST ONE JOB COULD PAY FOR THIS MANUAL

Business News Publishing Co. 8-7-61
450 W. Fort St., Detroit 26, Mich.

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☐ Payment enclosed (if so, we pay postage) ☐ Bill me

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O. L. RONE
Manager

MAdison 7-8971

OLYMPIC AND FIGUEROA STREETS
LOS ANGELES 15, CALIFORNIA

Foreign Correspondence

DATA ON HISTORY OF REFRIGERATION

London, England

Editor:

I am preparing some material for a study I am making of the history of refrigeration.

Could you possibly give me some information on the pioneer of electrical refrigeration for the home?

I understand Kelvinator was first in the field in 1914, but I wonder if you could give the names of other manufacturers concerned in these early stages.

Although Linde in Germany was the first, I believe, with electric refrigeration, I understand this was only applied to ice making in a commercial sense.

I would be most grateful if you could give me this information from a global point of view.

Thanking you in anticipation.

N. DRIES

Editor's Answer:

Although Linde in Germany was a pioneer in ice-making machinery, the first mechanical refrigeration system actually was built in Australia in 1856. It was a shipboard installation to preserve meats for the long haul to Britain.

Kelvinator probably was the first household refrigerator in production, although E. T. Williams exhibited a hand-built model in 1912.

From 1915 through 1918 the General Motors Guardian (soon renamed Frigidaire), Copeland, and Servel refrigerators appeared. Other early makes were Absopure and Zerozone.

In the 1920's, Norge, General Electric, Westinghouse, Coldspot (Sears Roebuck) and Williams got into the business. It wasn't until the early 1930's, however, that the industry really began to roll.

●

FINDS ITS PLANTS IN EUROPE BOOST EXPORTS

Tyler International
Niles, Michigan

Editor:

American business, with an eye to future growth, is producing equipment to meet local needs. To meet this challenging need, fabricating plants are being erected in other countries, and licensees are set up to take care of this specific demand.

Many people fear that such operations will affect American business. We have found that with our strong organizations in Germany and France (we have manufacturing facilities in both countries) we have exported more from the U. S. to these countries than we have ever done before.

The reason is that, as these areas get closer to American methods and ways, they desire additional products that are available only from U.S. sources.

SAM WEST,
Sales Manager

●

CONDENSING UNIT OPERATES 24 HOURS ON BATTERY

Smyrna, Georgia

Editor:

Have read your paper with keen interest for many years and it has been very helpful many times. Your editorials, stories, reports and comments have been enjoyed and we hope that we can continue to enjoy them for a long time.

We note recently a trend in your activities pointing to what you feel is a market needing our attention, export. Maybe not needing but certainly a market that justifies looking into.

In this connection I am prompted to write this as it ties in with a product and an offer that I have just experienced seeing and being offered. I have experienced some export efforts years ago on a service man basis for Norge.

This product is a small, serviceable condensing unit, air cooled, at present one/eighth HP, 12 VDC, direct drive-semi-hermetic, air cooled by forced air.

Can be plugged into 115VAC line and left there permanently. Circuit includes a rectifier and requires a battery of the automobile storage type. Product is now being supplied to marine and allied users with an evaporator and control, charged, connected and ready to install in customer's cabinet or can be purchased from its manufacturer already installed in a 3, 5, or an 8-ft cabinet ready to go.

It is proven functionally sound and very practical. It will operate approximately 24 hours under normal conditions from a fully charged 12-volt battery.

This makes it useful for short trips away from the power source or for use in areas where the power supply is intermittent. It is simple and easy to repair as all parts are replaceable and no special tools are needed.

This product can be supplied either complete with cabinet ready to plug in or the condensing unit can be purchased separately, connected to an evaporator or without an evaporator for local applications. It is presently being manufactured in modest quantities, but facilities are available for whatever expansion might be necessary.

I feel this item has great export potential in many of the areas of the world that are now beginning to enjoy some of the benefits of an improved living standard.

Direct current is available usually first in newly developed areas. Would you care to advise me how to proceed with trying to market this item, whom and where to contact in the export field both in this country and abroad? Any help or advise will be greatly appreciated.

RICHARD E. KLINGLER

Current Literature

Heating and Cooling

POMPTON PLAINS, N. J.— A comprehensive 22 in. by 17 in. portfolio containing six master sheets on Edwards heating and cooling equipment is offered by Edwards Engineering Corp.

The sheets give descriptions, operating details, and installation procedure on zone heating and cooling of residences, apartments, churches, motels, and older homes. There is a sheet on Edwards new "Off-Peak" electrohydronic heating system.

Oil Burning Research

NEW YORK CITY — Release of the report on research and development needs for oil burning equipment, prepared by Battelle Memorial Institute in 1960, was announced by the Marketing Div. of the American Petroleum Institute.

The report includes information on the competitive situation in oil heating, the technical and economic aspects of residential oil heating equipment, the need for new design concepts, and the action required for market retention and acquisition.

Identified as API Publication 1700, "Recommendations For an Industry-Wide Oil Burner Research Program," the report may be obtained at $5 per copy from the Publication Section, American Petroleum Institute, 1271 Avenue of the Americas, New York 20, N. Y.

Air Conditioning

MINNEAPOLIS—Catalog 560 issued by McQuay, Inc., 1601 Broadway St. N. E., Minneapolis 13, Minn., describes and illustrates its "Seasonmaster" central air conditioning line.

In addition to general and mechanical design features, the catalog offers detailed, step-by-step information to assist in selection of unit type and size, cooling and heating coil selection, accessories and determination of fan speed and motor hp requirements.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

GENERAL MANAGER—Manufacturing, 35-year-old, graduate mechanical engineer, past 10 years directed all phases of operation of a small company on a limited budget. Desires to buy on contract a metal products manufacturing business, or become associated with a distressed, small manufacturer at a nominal salary with a rescue agreement. LARRY BORDNER, JR., 203 North Bailey, Freeport, Illinois.

PROJECT ENGINEER, 20 years' experience in air conditioning and refrigeration, designing, installation and service in Indonesia, Europe and Netherlands-Antilles, shortly settling in the United States. Married, age 42. Preferably in southern California. For resume and references contact: E. HERBERT RUSCH, Box 197, Curacao, Netherlands-Antilles.

AMERICAN WITH 8 years' experience as chief engineer on major air conditioning projects in Middle East desires same type position with contractor or area sales manager with manufacturer. Same area preferred but other parts of the world will be seriously considered. BOX A6815, Air Conditioning, Heating & Refrigeration News.

ITALIAN AIR conditioning experienced man, 29 years old, married, fair technical background and university education, nine years' solid experience in room and packaged air conditioners selling organization, with two leading Italian distributor companies, desires challenging new position in Europe. Sound knowledge of Italian air conditioning market, distributors and dealers. Speaking English and French. Knowledge of German and Spanish. BOX A6817, Air Conditioning, Heating & Refrigeration News.

MANUFACTURERS' AGENT covering northern California including Kern and San Luis Obispo counties and all of Nevada with the exception of Clark County with offices in San Francisco, San Jose, Fresno, Sacramento and San Rafael, California would like to take on a line of cooling towers, air cooled and evaporative condensers. Now handling a line of refrigeration and air conditioning equipment through 150 tons. BOX A6819, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

LABORATORY TECHNICIANS — Experienced in the testing of air conditioning equipment for second and third shift operations. Permanent positions with well-established, employee-owned, independent organization serving large industry groups. Good pay plus shift bonus and recognition of responsible personal performance. Send resume to ELECTRICAL TESTING LABORATORIES, INC., New York 21, New York.

STAFF ENGINEER with drive and imagination. Creative thinker able to design and estimate costs of: 1. Air conditioning and refrigeration systems. 2. Controlled environment enclosures and buildings, clean rooms. Unusual opportunity for qualified man. MOORE & HANKS COMPANY, 9702 E. Rush Street, S. El Monte, Calif. CUmberland 3-1169, GIlbert 8-6520.

MANUFACTURERS' REPRESENTATIVE: to sell dealers and distributors a trouble-free line of automatic ice cube machines. Some choice areas still open. Contact: QUALITY MANUFACTURING CO., P.O. Box 71, Chilton, Wisconsin. Phone 517, giving references, experience, other lines handled, territory covered or desired.

MAJOR MANUFACTURER of heating and cooling equipment has requirement for an experienced sales engineer for assignment in the Des Moines, Iowa area. Send complete resume to A. J. Gilbreath, Regional Sales Manager, WESTINGHOUSE ELECTRIC CORPORATION, Air Conditioning Division, Box 3426, Merchandise Mart Plaza, Chicago 54, Illinois.

SALES ENGINEER, technical graduate or equivalent with refrigeration and sales experience. Age 23 to 36. Interesting work calling on contractors, wholesalers and air conditioning and refrigeration manufacturers in established territories for a nationally known control manufacturer. Starting Salary based on experience. Replies should contain complete resume of education and experience. All replies will be kept confidential. BOX A6817, Air Conditioning, Heating & Refrigeration News.

SALESMAN WANTED. Northern New Jersey. By well established wholesale distributor of top brand lines major cooling and heating products. Drawing account against commissions, plus expenses. Submit full resume. All replies confidential. BOX A6820, Air Conditioning, Heating & Refrigeration News.

SALES MANAGER — Large eastern manufacturer of air conditioning equipment selling to distributors, requires district sales manager in western region for its line of central air conditioning up to 5 ton and heating equipment. Experience with packaged and remote air conditioners and heat pumps is vital. Familiarity with western market important. Salary, commission, expenses. Send detailed resume. Your replies confidential. BOX A6821, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

WANTED TO buy for cash—freezer plant complete or compressors, electric motors, transformers, Diesel engines, pipe and other equipment. Mail lists to both offices, our buyer will call promptly. TRANSFORMER CO. OF AMERICA, Box 387, New Rochelle, New York. Or to Florida—Michael Jawitz, Buyer, Box 4468, Miami Beach 41, Florida.

EQUIPMENT FOR SALE

WESTINGHOUSE CLS-850 (25 ton) used condensing units 3/60/440. These machines are in excellent working condition. Must sacrifice to make additional space available. AIR CON, INC., 1148 Route 22, Mountainside, New Jersey. ADams 3-5640.

ONE NEW model 5-3 Sweden soda fountain. Never used. Less than distributor's cost, with self-contained hermetic compressor. One new 10 gallon capacity Sweden shake machine air cooled compressor. Less than distributor's cost. Never used. Available for inspection. Write P. O. BOX 107, Bridgeport, Ohio. Phone number NE 5-0563.

500 TECUMSEH P-91 "pancake" condensing units, ¼ h.p. 115v, 60 cycle, manufacturers' factory rebuilts like new for service replacement-compressor, guaranteed, individually boxed. Quantity price $20.00 ea. ship wt. 45 lbs. Sample units $23.95 f.o.b. N.Y. 500 Tecumseh P-91 compressors only, with relay and overload, like new, same as above — individually boxed —guaranteed, quantity price $15.95; sample compressor $18.95. Ship wt. 26 lbs. Check or money order to: COMMERCIAL CONTROLS, 1463 Crotona Place, Bronx 56, New York City. WY 2-5083.

Export-Import Firms—contact us for air conditioning and refrigeration surplus and rebuilt equipment and parts.

NOTICE: DISTRIBUTORS, dealers, servicemen, users refrigeration equipment—repair parts available all models Baker ammonia and Freon compressors. Also models 6B and F6B ammonia compressors. We are exclusive Baker export sales office. Manufacturers' export agents refrigeration, air conditioning and allied equipment. THE KEISER COMPANY, 1555 W. 79th St., Chicago 20, Illinois.

BRAND NEW icemaker pump motor and impeller repair kits for Scotsman Carrier $18.00 at Kesco wholesalers coast to coast. Bronze replacement icemaker pumps for York Carrier $29.95. Hose connection adaptors for York Carrier $1.00. Complete line condensate pumps from 10' to 50' head, 115-208-230 volts. Catalog. KESCO, Jamaica 13, N. Y.

ATTIC INSTALLATION kits for 2 and 3 ton air conditioning units consisting of aluminum fiberglass duct work, ceiling outlets and return air grilles. Special closeout prices. STANDARD AIR SERVICE CO., 1225 S. Wabash, Chicago, Illinois, HA 7-4567.

ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

MISCELLANEOUS

SERVICING AUTO air conditioners? Then you'll save time and earn more money if you are fully informed on all types of systems on the market. They're described fully in "Servicing Automobile Air Conditioners" available in four volumes covering models from 1954 through 1959. Vols. 1, 2, and 4 are $2 each; Vol. 3 is only $1. See your wholesaler or order from BUSINESS NEWS PUBLISHING CO., Dept. B, 450 W. Fort, Detroit 26, Mich.

ATTENTION SERVICEMEN — More than one half million refrigeration compressors are operating with 'Chicago' replacement valve plates and seals. See your wholesaler. CHICAGO VALVE PLATE & SEAL CO., 6960 W. Grand Ave., Chicago 35, Illinois.

NEW! "The Technique Of No Call Back Service," the first publication of its kind for the air conditioning and refrigeration mechanic and contractor. Eliminate costly call backs now! Cut out expensive, unnecessary return trips. Send $2.00 cash or check to WASHINGTON SERVICE PUBLICATIONS, 422 Washington Bldg., N.W., Washington 5, D. C.

MANUFACTURERS' REPRESENTATIVE needs additional lines. Thoroughly acquainted with all manufacturers of refrigeration and air conditioning equipment in the following states: Michigan, Ohio, Indiana and Kentucky. BOX A6822, Air Conditioning, Heating & Refrigeration News.

Nigerian Status Symbol

Lack of Electricity Doesn't Dull Enthusiasm for Stolen Refrigerators

LAGOS, Nigeria—A refrigerator is a status symbol? Yep.

That is the case in many parts of coastal Africa, where a tribal family's prestige ikon these days is a shiny refrigerator sitting in front of its thatched hut.

Unfortunately for the refrigeration industry, most of these units were not sold to natives. Rather, they were stolen when the white residents of Africa fled the country during recent revolts!

So far as using a refrigerator to cool food, incidentally, that is out of the question at this moment because there is little electricity available.

Naturally, it is the hope of our industry that the next African status symbol will be an operating refrigerator — and an air conditioner in the window.

Desire For Luxuries

Even in jungle villages this is not a remote possibility. The revolutions which have brought dubious independence to these nations have given rise to new desires for luxuries.

Simultanetously, these political revolutions have provided a darkening threat to foreign political maneuvers. Simple truth in Africa is that they want our commercial salesman; detest our do-gooders and governors.

In spite of these risks, many American and British companies, sensing possible consumer saturation of their products at home, are setting out to penetrate one of the greatest potential markets ever opened.

In tropical Africa alone there are millions of people who insist that if they must adopt modern political systems, they are going to enjoy modern industrial luxuries, too.

Why Nigeria Looks So Good

For those internationally-minded companies intent on cracking the African market, Nigeria presents a comparatively ideal vantage point. Reasons for this suggestion are not difficult to discern.

In the first place, Nigeria is relatively stable politically. Its government, although officially neutral, is favorable to the West.

Nigerian officials have welcomed foreign investment, and they harbor overt hopes of welding international capital and low-wage Nigerian workers into foreign directed industrialization.

Incentives proffered toward foreign investors include the facts that profits may be transferred, and that tax exemptions are granted to "pioneer" companies for periods up to five years.

Shell-BP Petroleum Co., a subsidiary of British Shell, has poured over $200,000,000 into Nigeria since 1939 in a profitable search for oil.

A 12-man technical team, headed by Westinghouse Electric International Vice President A. B. McCloskey, recently toured Nigeria to examine possibilities for an iron and steel complex in that country, and came away with a favorable enough impression to plan a modest initial investment.

Opportunities for the air-conditioning and refrigeration industries in this hot-humid area are too obvious to dwell upon.

Moreover, this is an area that the Russians aren't trying to concubine. Ivan isn't welcome here.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

Market for Refrigeration Growing Rapidly In Malaya—U.S. Dominates

KUALA LUMPUR, Malaya—Market for refrigeration is growing in the Federation of Malaya, and U. S. manufacturers dominate in sales of freezers and larger refrigerators (over 12 cu ft).

There seems to be a good continuing demand for freezers, but many of them go into commercial applications rather than homes.

Stores and restaurants, which are numerous in all towns in Malaya, are finding that freezers are desirable for fresh food storage.

Many small stores seem to prefer household type freezers over the larger commercial models.

While U. S. makes represent nearly two-thirds of the refrigerators over 12 cu ft sold in Malaya, there is keen competition from British, German, and French manufacturers in the more popular smaller sizes.

Total imports of refrigerators, freezers, and air conditioners amounted to about $5 million in 1959, of which U. S. manufacturers supplied 47%. Imports of these items amounted to $3.3 million in the first half of 1960.

All household electrical equipment can be imported freely from the United States under open general license, and no preference is given to products originating in British Commonwealth countries.

Regardless of source, there is a 20% ad valorem duty on refrigerators, freezers, and household air conditioners.

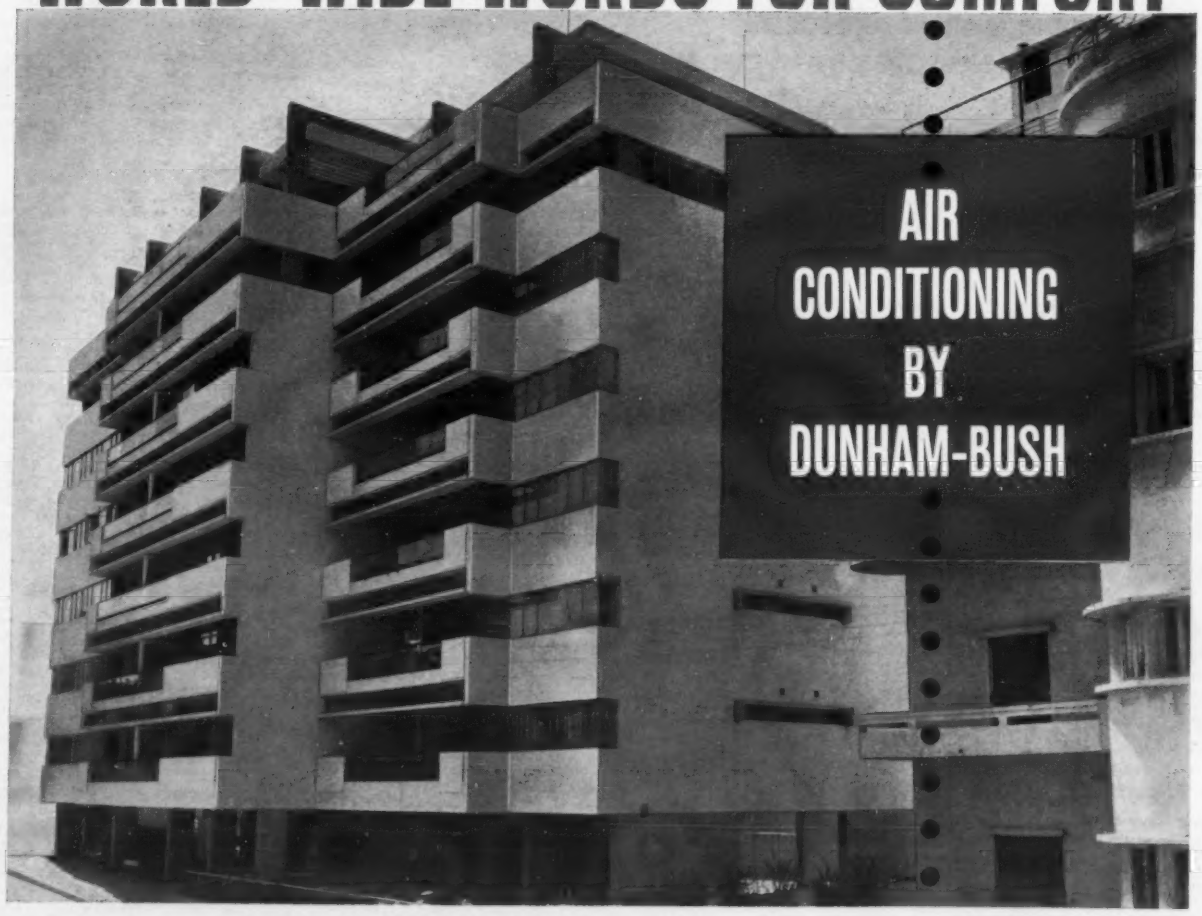
Despite the general popularity of U. S. makes, a common complaint of Malayan importers and dealers is that some American firms don't supply equipment suitable to the local current characteristics, which is rated at 230/400 volts, 50 cycles, a. c.

Much U. S. equipment is designed for 60 cycles. Although they will operate on 50 cycles, their efficiency isn't good.

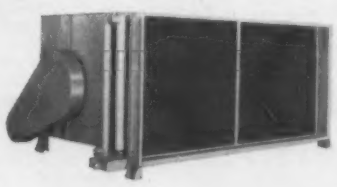
Management Center Opens In Brussels

NEW YORK CITY—The first management center in Europe has been established in Brussels and will open for operations Sept. 1, it was announced by Frederic E. Pamp, Jr., president, International Management Association, foreign arm of the American Management Association.

WORLD-WIDE WORDS FOR COMFORT



Compact AIR HANDLING UNITS PROVIDE COOLING-HEATING-HUMIDITY CONTROL FOR BEIRUT, LEBANON APARTMENT BUILDING



Dunham-Bush products provide comfort in many countries throughout the world. For instance, this attractive apartment building in the desirable Rass Beirut area uses 19 Dunham-Bush "compact" air handling units (plus compressors and chillers) for efficient and economical cooling, heating and humidity control.

These Dunham-Bush "compact" air handling units, like other Dunham-Bush products, offer superior export advantages. Lower shipping costs, lower installation costs, less required equipment area, 13 sizes with direct expansion, water or steam coils . . . or combinations of these coils. Engineered flexibility of components assures delivery of air conditioned to fulfill any seasonal or product demand. (The Beirut apartment contains 38,000 square feet; temperature range is from approximately 40° in winter to 90° in summer.)

Write or cable for details of "compact" air handling units and other Dunham-Bush products . . . your world-wide "one source—one responsibility" for air conditioning, refrigeration and heating.

DUNHAM-BUSH EXPORT DEPT.

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